CPA Mathematics

Answer Keys/Solutions

ALBAKIO INTERNATIONAL
LAHORE - KARACHI

Grade: Five

UNIT #1

Exercise #1.1

Question 1: Write the numbers in words.

i) 1,523,389

One million, five hundred twenty-three thousand, three hundred eighty-nine.

ii) 3,973,454

Three million, nine hundred seventy-three thousand, four hundred fifty-four.

iii) 4,654,204

Four million, six hundred fifty-four thousand, two hundred four.

iv) 6,776,300

Six million, seven hundred seventy-six thousand, three hundred.

v) 8,100,890

Eight million, one hundred thousand, eight hundred ninety.

vi) 9,990,990

Nine million, nine hundred ninety thousand, nine hundred ninety.

vii) 456,989

Four hundred fifty-six thousand, nine hundred eighty-nine.

viii) 3,222,311

Three million, two hundred twenty-two thousand, three hundred eleven.

Question 2: Write the numbers in figures.

i) Four million nine thousand and nine hundred.

4,009,900

ii) Seven hundred seventy-five thousand seven hundred and five.

775,705

iii) Fifty-five thousand and four hundred.

55,400

iv) Nine million, fifty-five thousand and twenty-four.

9,055,024

v) One million, seven hundred thousand and two.

1,700,002

vi) Nine hundred eighty-five thousand seven hundred and eight.

985,708

Exercise #1.2.1

Question 1: Add 399,422 and 8.

Answer 1:

```
 399,422
+      8
 -----------
 399,430
```

Question 2: Add 928,564 and 9.

Answer 2:

```
 928,564
+      9
 -----------
 928,573
```

Question 3: Add 428,301 and 5.

Answer 3:

```
 428,301
+      5
 -----------
 428,306
```

Exercise #1.2.2

Question 1: Add 321,436 and 42.

Answer 1:

321,436

\+ 42

321,478

Question 2: Add 900,942 and 64.

Answer 2:

900,942

\+ 64

901,006

Question 3: Add 432,691 and 56.

Answer 3:

432,691

\+ 56

432,747

Exercise #1.2.3

Question 1: Add 678,321 and 822.

Answer 1:

678,321

\+ 822

679,143

Question 2: Add 986,432 and 596.

Answer 2:

986,432

\+ 596

987,028

Question 3: Add 543,000 and 956.

Answer 3:

543,000

\+ 956

543,956

Exercise #1.2.4

Question 1: Add 483,833 and 2,400.

Answer 1:

483,833

\+ 2,400

486,233

Question 2: Add 830,990 and 3,300.

Answer 2:

830,990

\+ 3,300

834,290

Question 3: Add 100,399 and 8,800.

Answer 3:

100,399

\+ 8,800

109,199

Exercise #1.2.5

Question 1: Solve the following:

i) 445,231 + 119,867

```
  445,231
+ 119,867
  -----------
  565,098
```

ii) 353,009 + 124,591

```
  353,009
+ 124,591
  -----------
  477,600
```

iii) 135,024 + 321,914

```
  135,024
+ 321,914
  -----------
  456,938
```

iv) 194,512 + 12,543

```
  194,512
+   12,543
  -----------
  207,055
```

Exercise #1.2.6

Question 1: Add these:

i) 143,433 and 539,438

```
  143,433
+ 539,438
```

682,871

ii) 400,300 and 928,456

400,300

+ 928,456

1,328,756

iii) 492,361 and 589,402

492,361

+ 589,402

1,081,763

iv) 300,900 and 650,310

300,900

+ 650,310

951,210

Exercise #1.3

Question 1: Subtract 9 from 838,888.

Answer 1:

838,888

- 9

838,879

Question 2: Take away 7 from 630,196.

Answer 2:

630,196

- 7

630,189

Question 3: Subtract 4 from 999,999.

Answer 3:

999,999

\- 4

999,995

Exercise #1.3.1

Question 1: Take away 98 from 444,596.

Answer 1:

444,596

\- 98

444,508

Question 2: Subtract 53 from 333,336.

Answer 2:

333,336

\- 53

333,283

Question 3: Take away 89 from 666,666.

Answer 3:

666,666

\- 89

666,577

Exercise #1.3.2

Question 1: Take away 488 from 886,439.

Answer 1:

```
  886,439
-     488
  -----------
  885,951
```

Question 2: Subtract 933 from 728,300.

Answer 2:

```
  728,300
-     933
  -----------
  727,367
```

Question 3: Subtract 999 from 999,999.

Answer 3:

```
  999,999
-     999
  -----------
  999,000
```

Exercise #1.3.3

Question 1: Subtract 908 from 968,343.

Answer 1:

```
  968,343
-     908
  -----------
  967,435
```

Question 2: Take away 806 from 762,433.

Answer 2:

762,433

- 806

761,627

Question 3: Subtract 143 from 521,463.

Answer 3:

521,463

- 143

521,320

Exercise #1.3.4

Question 1: Abeer has Rs. 563,900. He gives Rs. 68,000 to his brother. How much money will be left with Abeer?

Answer 1:

563,900

- 68,000

495,900

Question 2: Take away 43,623 from 928,956.

Answer 2:

928,956

- 43,623

885,333

Question 3: Take away 23,211 from 532,411.

Answer 3:

532,411

- 23,211

509,200

Exercise #1.3.5

Question 1: Solve these:

i) 543,216 - 323,216

543,216

- 323,216

220,000

ii) 999,999 - 183,662

999,999

- 183,662

816,337

iii) 852,366 - 325,644

852,366

- 325,644

526,722

iv) 888,888 - 765,432

888,888

- 765,432

123,456

v) 986,355 - 276,855

986,355

- 276,855

709,500

vi) 126,598 - 114,235

126,598

- 114,235

12,363

Exercise #1.4.1

1. Round to hundreds:

- i. 245,029 = 245,000
- ii. 134,415 = 134,400
- iii. 436,862 = 436,900
- iv. 137,231 = 137,200
- v. 246,577 = 246,600
- vi. 789,393 = 789,400

2. Round to thousands:

- i. 343,513 = 344,000
- ii. 187,391 = 187,000
- iii. 134,400 = 134,000

3. Round to ten thousands:

- i. 311,419 = 310,000
- ii. 259,426 = 260,000
- iii. 176,145 = 180,000
- iv. 328,401 = 330,000
- v. 682,432 = 680,000

Exercise #1.4.2

1. Estimate the total. Then work out the correct answer.

i) 3567 + 2332

- Estimation: 3500 + 2300 = 5800
- Exact Calculation:

3567

+ 2332

5899

ii) 1345 + 3022

- Estimation: 1300 + 3000 = 4300
- Exact Calculation:

1345

+ 3022

4367

2. Estimate the answer. Don't forget to verify it.

i) Subtract 43,98 from 69,400.

- Estimation: 70,000 - 44,000 = 26,000
- Exact Calculation:

69,400

- 43,98

65,002

ii) Take away 490 from 680,393.

- Estimation: 680,000 - 500 = 679,500
- Exact Calculation:

680,393

- 490

679,903

iii) Take away 19,43 from 82,100.

- Estimation: 82,000 - 20,000 = 62,000
- Exact Calculation:

82,100

- 19,43

62,657

iv) Subtract 680 from 93,600.

- Estimation: 94,000 - 700 = 93,300
- Exact Calculation:

93,600

- 680

92,920

Exercise #1.5.1

i) Multiply 54800 with 5.

54800

x 5

274000

ii) Multiply 92891 with 8.

92891

x 8

743128

iii) Multiply 72812 with 5.

72812

x 5

364060

Exercise #1.5.2

i) Multiply 63800 x 43

63800

x 43

191400

+2552000

2743400

ii) Multiply 40240 x 56

40240

x 56

241440

+2012000

2253440

iii) Multiply 32600 x 43

32600

x 43

97800

+1304000

1401800

Exercise #1.5.3

1. Solve these:

i. 10 x 40:

10

x 40

400

ii. 175 x 50:

175

x 50

8750

iii. 43580 x 70:

43580

x 70

3050600

iv. 41900 x 900:

41900

x 900

37710000

v. 18467 x 72:

18467

x 72

36934

+1292690

1329624

vi. 44734 x 862:

44734

x 862

89468

+2684040

+35787200

38551208

vii. 15 x 200:

15

x 200

3000

viii. 22784 x 400:

22784

x 400

9113600

ix. 11000 x 500:

11000

x 500

5500000

2. Solve the following:

i.
45367
x 3

136101

ii.
8765
x 90

788850

iii.
35465
x 145

5144925
+1418600
+3546500

5144925

iv.
20766
x 625

103830
+415320
+12459600

13018710

v.
51865
x 852

103730
+4149200
+41492000

441881980

vi.
41450
x 799

373050
+3730500
+29015000

33118550

Exercise #1.6

1. Divide these:

i. 98766 by 2:

49383

2 | 98766

-8

18

-18

7

-6

16

-16

6

-6

0

ii. 45435 by 5:

9087

5 | 45435

-45

4

-0

43

-40

35

-35

0

iii. 68428 by 6:

11404.666...

6 | 68428

-6

8

-6

24

-24

28

-24

42

-36

6

Exercise #1.6.2

1. Divide these:

i. 88844 ÷ 8:

11105.5

8 | 88844

-8

8

-8

8

-8

4

-4

4

-4

0

ii. 69369 ÷ 6:

11561.5

6 | 69369

-6

9

-6

33

-30

36

-36

9

iii. 86948 ÷ 18:

4830.444...

18 | 86948

-72

149

-144

54

-54

8

iv. 16798 ÷ 10:

1679.8

10 | 16798

-10

67

-60

79

-70

98

-90

8

v. 19214 ÷ 2:

9607

2 | 19214

-18

12

-12

1

-0

14

-14

0

vi. 41400 ÷ 4:

10350

4 | 41400

-4

14

-12

20

-20

0

vii. 45854 ÷ 8:

5731.75

8 | 45854

-40

58

-56

25

-24

14

-8

6

viii. 61100 ÷ 6:

10183.333...

6 | 61100

-6

11

- 6

51

-48

30

-30

0

ix. 67543 ÷ 10:

6754.3

10 | 67543

-60

75

-70

```
-----
 54
-50
-----
 43
-40
-----
 3
```

2. Fill in the blanks.

i. If 98250 ÷ 10, the remainder is 0 and quotient is 9825.

ii. If 43465 ÷ 10, the remainder is 5 and quotient is 4346.

iii. If 45404 ÷ 10, the remainder is 4 and quotient is 4540.

Exercise #1.6.3

1. Jamil and his wife's monthly earnings and savings:

Total monthly earning: Rs. 22,560 + Rs. 18,500 = Rs. 41,060

Monthly expenditure: Rs. 37,500

Monthly savings: Rs. 41,060 - Rs. 37,500 = Rs. 3,560

Therefore, Jamil and his wife earn Rs. 41,060 together monthly and save Rs. 3,560.

2. Mr. Noman's monthly income:

Monthly salary: Rs. 16,630

Monthly rent: Rs. 500

Monthly stipend: Rs. 1,250

Total monthly income: Rs. 16,630 + Rs. 500 + Rs. 1,250 = Rs. 18,380

Therefore, Mr. Noman collects Rs. 18,380 every month.

3. Mushtaq's monthly earnings and savings:

Total monthly earning: Rs. 4,500 + Rs. 2,500 = Rs. 7,000

Monthly expenditure: Rs. 6,000

Monthly savings: Rs. 7,000 - Rs. 6,000 = Rs. 1,000

Therefore, Mushtaq saves Rs. 1,000 every month.

Exercise #1.7

i. Is 431 divisible by 7?

No, 431 is not divisible by 7.

ii. Is 777 divisible by 7?

Yes, 777 is divisible by 7.

iii. Is 111 divisible by 11?

Yes, 111 is divisible by 11.

Exercise #1.8

1. Answer these questions using ‘yes’ or ‘no’:

i. Is 88 a prime number?

No

ii. Is 91 a composite number?

Yes

iii. Is 20 a prime number?

No

UNIT #2

Exercise #2.1

1. Find the HCF of the following numbers using the prime factorization method.

i. 12, 14

- Prime factorization of 12: $2 \times 2 \times 3$
- Prime factorization of 14: 2×7
- HCF = 2

ii. 40, 48

- Prime factorization of 40: $2 \times 2 \times 2 \times 5$
- Prime factorization of 48: $2 \times 2 \times 2 \times 2 \times 3$
- HCF = $2 \times 2 \times 2 = 8$

iii. 28, 56

- Prime factorization of 28: $2 \times 2 \times 7$
- Prime factorization of 56: $2 \times 2 \times 2 \times 7$
- HCF = $2 \times 2 \times 7 = 28$

iv. 16, 18, 20

- Prime factorization of 16: $2 \times 2 \times 2 \times 2$
- Prime factorization of 18: $2 \times 3 \times 3$
- Prime factorization of 20: $2 \times 2 \times 5$
- HCF = 2

v. 24, 42, 45

- Prime factorization of 24: $2 \times 2 \times 2 \times 3$
- Prime factorization of 42: $2 \times 3 \times 7$
- Prime factorization of 45: $3 \times 3 \times 5$
- HCF = 3

vi. 35, 45

- Prime factorization of 35: 5×7
- Prime factorization of 45: $3 \times 3 \times 5$
- HCF = 5

vii. 82, 88, 90

- Prime factorization of 82: 2×41
- Prime factorization of 88: $2 \times 2 \times 2 \times 11$

- Prime factorization of 90: 2 × 3 × 3 × 5
- HCF = 2

viii. 36, 56, 64

- Prime factorization of 36: 2 × 2 × 3 × 3
- Prime factorization of 56: 2 × 2 × 2 × 7
- Prime factorization of 64: 2 × 2 × 2 × 2 × 2 × 2
- HCF = 2 × 2 = 4

2. Find the HCF of the following numbers using the division method.

i. 24, 26

2 | 24, 26

12, 13

HCF = 2

ii. 45, 75

5 | 45, 75

9, 15

3 | 9, 15

3, 5

HCF = 3 × 5 = 15

iii. 16, 30

2 | 16, 30

8, 15

2 | 8, 15

4, 15

HCF = 2

iv. 28, 38, 44

2 | 28, 38, 44

14, 19, 22

HCF = 2

v. 26, 90, 98

2 | 26, 90, 98

13, 45, 49

HCF = 2

vi. 32, 64, 78

2 | 32, 64, 78

16, 32, 39

2 | 16, 32, 39

8, 16, 39

HCF = 2 × 2 = 4

vii. 55, 65, 75

5 | 55, 65, 75

11, 13, 15

HCF = 5

viii. 30, 78, 60

2 | 30, 78, 60

15, 39, 30

3 | 15, 39, 30

5, 13, 10

HCF = 2 × 3 = 6

3. Marwa's Pins

To find the maximum number of groups, we need to find the HCF of 42 and 36.

- Prime factorization of 42: 2 × 3 × 7
- Prime factorization of 36: 2 × 2 × 3 × 3
- HCF = 2 × 3 = 6

So, Marwa can make a maximum of 6 identical groups.

4. Greatest Common Divisor of 46, 68, and 78

We can use the division method to find the HCF:

2 | 46, 68, 78

23, 34, 39

HCF = 2

So, the greatest number that divides 46, 68, and 78 without a remainder is 2.

Exercise #2.2

Let's solve the LCM problems:

1. Find the LCM of the following numbers by prime factorization method.

i. 45, 75, 60

- Prime factorization of 45: 3 × 3 × 5
- Prime factorization of 75: 3 × 5 × 5
- Prime factorization of 60: 2 × 2 × 3 × 5
- LCM = 2 × 2 × 3 × 3 × 5 × 5 = 900

ii. 35, 49, 91

- Prime factorization of 35: 5 × 7
- Prime factorization of 49: 7 × 7
- Prime factorization of 91: 7 × 13
- LCM = 5 × 7 × 7 × 13 = 3325

iii. 42, 48, 56

- Prime factorization of 42: 2 × 3 × 7
- Prime factorization of 48: 2 × 2 × 2 × 2 × 3
- Prime factorization of 56: 2 × 2 × 2 × 7
- LCM = 2 × 2 × 2 × 2 × 3 × 7 = 336

iv. 28, 35, 56

- Prime factorization of 28: 2 × 2 × 7
- Prime factorization of 35: 5 × 7
- Prime factorization of 56: 2 × 2 × 2 × 7
- LCM = 2 × 2 × 2 × 5 × 7 = 280

v. 15, 20, 50

- Prime factorization of 15: 3 × 5
- Prime factorization of 20: 2 × 2 × 5
- Prime factorization of 50: 2 × 5 × 5
- LCM = 2 × 2 × 3 × 5 × 5 = 300

vi. 52, 53, 54

- Prime factorization of 52: 2 × 2 × 13
- Prime factorization of 53: 53 (prime number)
- Prime factorization of 54: 2 × 3 × 3 × 3
- LCM = 2 × 2 × 3 × 3 × 13 × 53 = 221,976

2. Find the LCM by division method.

i. 16, 24, 30

2 | 16, 24, 30

8, 12, 15

2 | 8, 12, 15

4, 6, 15

2 | 4, 6, 15

2, 3, 15

3 | 2, 3, 15

2, 1, 5

LCM = 2 × 2 × 2 × 3 × 5 = 120

ii. 24, 22, 48

2 | 24, 22, 48

12, 11, 24

2 | 12, 11, 24

6, 11, 12

2 | 6, 11, 12

3, 11, 6

2 | 3, 11, 6

3, 11, 3

3 | 3, 11, 3

1, 11, 1

LCM = 2 × 2 × 2 × 3 × 11 = 528

iii. 14, 21, 56

2 | 14, 21, 56

7, 21, 28

7 | 7, 21, 28

1, 3, 4

LCM = 2 × 7 × 3 × 4 = 168

iv. 36, 54, 96

2 | 36, 54, 96

18, 27, 48

2 | 18, 27, 48

9, 27, 24

3 | 9, 27, 24

3, 9, 8

3 | 3, 9, 8

1, 3, 8

LCM = 2 × 2 × 3 × 3 × 8 = 288

v. 45, 55, 50

5 | 45, 55, 50

9, 11, 10

LCM = 5 × 9 × 11 × 10 = 4950

3. Find the smallest length of rope from which pieces of 9 cm, 12 cm and 15 cm can be cut.

To find the smallest length of rope, we need to find the LCM of 9, 12, and 15.

3 | 9, 12, 15

3, 4, 5

LCM = 3 × 3 × 4 × 5 = 180

So, the smallest length of rope is 180 cm.

4. Find the least number of flowers which can be used to make bouquets of 8, 12 and 15 flowers each.

To find the least number of flowers, we need to find the LCM of 8, 12, and 15.

2 | 8, 12, 15

4, 6, 15

2 | 4, 6, 15

2, 3, 15

3 | 2, 3, 15

2, 1, 5

LCM = 2 × 2 × 3 × 5= 60

So, the least number of flowers is 60.

5. Find the least number which is exactly divisible by 9, 12 and 18.

This is the same as finding the LCM of 9, 12, and 18.

2 | 9, 12, 18

9, 6, 9

3 | 9, 6, 9

3, 2, 3

3 | 3, 2, 3

1, 2, 1

LCM = 2 × 3 × 3 × 2 = 36

So, the least number is 36.

6. Saad, Ali and Yasir walk 24, 42 and 12 metres daily. What is the minimum distance that each of them cover equally?

To find the minimum distance, we need to find the LCM of 24, 42, and 12.

2 | 24, 42, 12

12, 21, 6

2 | 12, 21, 6

6, 21, 3

2 | 6, 21, 3

3, 21, 3

3 | 3, 21, 3

1, 7, 1

LCM = 2 × 2 × 2 × 3 × 7 = 168

So, the minimum distance they should cover is 168 meters.

Review Exercise

1. Encircle the correct options.

1. The HCF of two or more numbers is the greatest number which divides each of the given numbers exactly.
2. The HCF of 10, 20, 30 is 10.
3. The LCM of two or more prime numbers is equal to their product.
4. Prime factorization of 32 is 2 x 2 x 2 x 2 x 2.
5. LCM of 14, 16, 24 is 336.

2. Find the LCM of the given numbers using the prime factorization method.

i. 20, 50:

- Prime factorization of 20: 2 × 2 × 5
- Prime factorization of 50: 2 × 5 × 5
- LCM = 2 × 2 × 5 × 5 = 100

ii. 18, 36:

- Prime factorization of 18: 2 × 3 × 3
- Prime factorization of 36: 2 × 2 × 3 × 3

- LCM = 2 × 2 × 3 × 3 = 36

iii. 24, 42, 66:

- Prime factorization of 24: 2 × 2 × 2 × 3
- Prime factorization of 42: 2 × 3 × 7
- Prime factorization of 66: 2 × 3 × 11
- LCM = 2 × 2 × 2 × 3 × 7 × 11 = 1848

vii. 12, 24, 60:

- Prime factorization of 12: 2 × 2 × 3
- Prime factorization of 24: 2 × 2 × 2 × 3
- Prime factorization of 60: 2 × 2 × 3 × 5
- LCM = 2 × 2 × 2 × 3 × 5 = 120

viii. 45, 65, 75:

- Prime factorization of 45: 3 × 3 × 5
- Prime factorization of 65: 5 × 13
- Prime factorization of 75: 3 × 5 × 5
- LCM = 3 × 3 × 5 × 5 × 13 = 2925

3. Find the LCM of the given numbers using the division method.

i. 50, 70:

5 | 50, 70

10, 14

2 | 10, 14

5, 7

LCM = 5 × 2 × 5 × 7 = 350

ii. 36, 46:

2 | 36, 46

18, 23

LCM = 2 × 18 × 23 = 828

iii. 14, 42, 80:

2 | 14, 42, 80

7, 21, 40

2 | 7, 21, 40

7, 21, 20

2 | 7, 21, 20

7, 21, 10

5 | 7, 21, 10

7, 7, 2

7 | 7, 7, 2

1, 1, 2

LCM = 2 × 2 × 2 × 5 × 7 × 7 = 1960

iv. 20, 30, 40:

2 | 20, 30, 40

10, 15, 20

2 | 10, 15, 20

5, 15, 10

5 | 5, 15, 10

1, 3, 2

LCM = 2 × 2 × 5 × 3 × 2 = 120

v. 50, 60, 75:

5 | 50, 60, 75

10, 12, 15

2 | 10, 12, 15

5, 6, 15

3 | 5, 6, 15

5, 2, 5

LCM = 5 × 2 × 3 × 5 × 2 = 300

vi. 25, 35, 45:

5 | 25, 35, 45

5, 7, 9

LCM = 5 × 5 × 7 × 9 = 1575

4. Find the HCF and LCM of the numbers given using the prime factorization method.

i. 45, 55:

- Prime factorization of 45: 3 × 3 × 5
- Prime factorization of 55: 5 × 11
- HCF = 5
- LCM = 3 × 3 × 5 × 11 = 495

ii. 16, 34:

- Prime factorization of 16: 2 × 2 × 2 × 2
- Prime factorization of 34: 2 × 17
- HCF = 2
- LCM = 2 × 2 × 2 × 2 × 17 = 272

iii. 20, 30, 90:

- Prime factorization of 20: 2 × 2 × 5

- Prime factorization of 30: 2 × 3 × 5
- Prime factorization of 90: 2 × 3 × 3 × 5
- HCF = 2 × 5 = 10
- LCM = 2 × 2 × 3 × 3 × 5 = 180

iv. 28, 30, 36:

- Prime factorization of 28: 2 × 2 × 7
- Prime factorization of 30: 2 × 3 × 5
- Prime factorization of 36: 2 × 2 × 3 × 3
- HCF = 2
- LCM = 2 × 2 × 3 × 3 × 5 × 7 = 1260

5. Find the minimum length of an electric wire which can be exactly cut into pieces of lengths 34 cm, 56 cm and 84 cm.

To find the minimum length, we need to find the LCM of 34, 56, and 84.

2 | 34, 56, 84

17, 28, 42

LCM = 2 × 17 × 28 × 42 = 21168

So, the minimum length of the wire is 21168 cm.

6. What is the minimum number of cupcakes that can be divided among 56, 68 and 88 students exactly?

To find the minimum number of cupcakes, we need to find the LCM of 56, 68, and 88.

2 | 56, 68, 88

28, 34, 44

2 | 28, 34, 44

14, 17, 22

LCM = 2 × 2 × 14 × 17 × 22 = 20944

So, the minimum number of cupcakes is 20944.

UNIT #3

Exercise #3.1

1. Write these fractions in ascending order

(i) 3 1/6, 2 1/3, 4 1/6, 5 1/8

- Convert to improper fractions:
  3 1/6 = 19/6, 2 1/3 = 14/6, 4 1/6 = 25/6, 5 1/8 = 41/8
- Find a common denominator:
  19/6 = 76/24, 14/6 = 56/24, 25/6 = 100/24, 41/8 = 123/24
- Ascending order:
  2 1/3, 3 1/6, 4 1/6, 5 1/8

(ii) 2/6, 6/6, 1/6, 3/6

- Simplify fractions:
  1/6, 2/6, 3/6 = 1/2, 6/6 = 1
- Ascending order:
  1/6, 2/6, 3/6, 6/6

(iii) 5/10, 3/9, 8/10, 8/9

- Simplify fractions:
  5/10 = 1/2, 3/9 = 1/3, 8/10 = 4/5, 8/9 (already simplified)
- Convert to a common denominator:
  1/2 = 45/90, 1/3 = 30/90, 4/5 = 72/90, 8/9 = 80/90
- Ascending order:
  1/3, 1/2, 4/5, 8/9

---

2. Write these fractions in descending order

(i) 5/9, 3/1, 4/1, 8/2

- Simplify fractions:
  5/9, 3/1 = 3, 4/1 = 4, 8/2 = 4
- Descending order:
  4, 4, 3, 5/9

(ii) 3/8, 1/8, 4/8, 8/8

- Simplify fractions:
  3/8, 1/8, 4/8 = 1/2, 8/8 = 1

- Descending order:
  1, 1/2, 3/8, 1/8

(iii) 4/10, 9/10, 1/10, 3/10

- Descending order:
  9/10, 4/10, 3/10, 1/10

Exercise #3.2

1. Solve these:

i. 3/4 + 5/6

- Find a common denominator: 12
- Convert the fractions: 9/12 + 10/12
- Add the numerators: 19/12
- Answer: 1 7/12

ii. 2/3 + 5/6

- Find a common denominator: 6
- Convert the fractions: 4/6 + 5/6
- Add the numerators: 9/6
- Answer: 1 1/2

iii. 1/2 + 1/3

- Find a common denominator: 6
- Convert the fractions: 3/6 + 2/6
- Add the numerators: 5/6
- Answer: 5/6

iv. 3/4 + 4/5

- Find a common denominator: 20
- Convert the fractions: 15/20 + 16/20
- Add the numerators: 31/20
- Answer: 1 11/20

v. 1/6 + 2/3

- Find a common denominator: 6

- Convert the fractions: 1/6 + 4/6
- Add the numerators: 5/6
- Answer: 5/6

vi. 4/5 + 8/15

- Find a common denominator: 15
- Convert the fractions: 12/15 + 8/15
- Add the numerators: 20/15
- Answer: 1 1/3

2. Solve these:

i. 1/2 + 2/3 + 3/4

- Find a common denominator: 12
- Convert the fractions: 6/12 + 8/12 + 9/12
- Add the numerators: 23/12
- Answer: 1 11/12

ii. 1/2 + 1/3 + 1/4

- Find a common denominator: 12
- Convert the fractions: 6/12 + 4/12 + 3/12
- Add the numerators: 13/12
- Answer: 1 1/12

iii. 1/8 + 1/4 + 1/12

- Find a common denominator: 24
- Convert the fractions: 3/24 + 6/24 + 2/24
- Add the numerators: 11/24
- Answer: 11/24

iv. 3/8 + 5/16 + 7/16

- Find a common denominator: 16
- Convert the fractions: 6/16 + 5/16 + 7/16
- Add the numerators: 18/16
- Answer: 1 1/8

v. 3/8 + 1/12 + 7/16

- Find a common denominator: 48
- Convert the fractions: 18/48 + 4/48 + 21/48
- Add the numerators: 43/48
- Answer: 43/48

vi. 3/7 + 5/14 + 6/21

- Find a common denominator: 42
- Convert the fractions: 18/42 + 15/42 + 12/42
- Add the numerators: 45/42
- Answer: 1 3/14

3. Solve these:

i. 8/9 - 5/6

- Find a common denominator: 18
- Convert the fractions: 16/18 - 15/18
- Subtract the numerators: 1/18
- Answer: 1/18

ii. 5/12 - 1/4

- Find a common denominator: 12
- Convert the fractions: 5/12 - 3/12
- Subtract the numerators: 2/12
- Answer: 1/6

iii. 8/15 - 7/20

- Find a common denominator: 60
- Convert the fractions: 32/60 - 21/60
- Subtract the numerators: 11/60
- Answer: 11/60

iv. 7/24 - 5/36

- Find a common denominator: 72
- Convert the fractions: 21/72 - 10/72

- Subtract the numerators: 11/72
- Answer: 11/72

v. 5/16 - 3/32

- Find a common denominator: 32
- Convert the fractions: 10/32 - 3/32
- Subtract the numerators: 7/32
- Answer: 7/32

Exercise #3.3

1. Solve these:

(i) 3 times of 3/4:

3 × 3/4 = 9/4 = 2 1/4

(ii) 7 times of 21/28:

7 × 21/28 = 147/28 = 5 1/4

(iii) 4 times of 1/16:

4 × 1/16 = 4/16 = 1/4

(iv) 13 times of 1/39:

13 × 1/39 = 13/39 = 1/3

---

2. Solve these:

(i) 2/17 × 51/74:

(2 × 51) / (17 × 74) = 102 / 1258 = 51 / 629

(ii) 27/29 × 87/54:

(27 × 87) / (29 × 54) = 2349 / 1566 = 783 / 522 = 261 / 174

(iii) 3/10 × 50/60:

(3 × 50) / (10 × 60) = 150 / 600 = 1/4

(iv) 27/81 × 9/7:

(27 × 9) / (81 × 7) = 243 / 567 = 3/7

---

3. Find the product of the following:

(i) 1/5 and 1/5:

1/5 × 1/5 = 1/25

(ii) 1/6 and 1/7:

1/6 × 1/7 = 1/42

(iii) 7/5 and 5/8:

(7 × 5) / (5 × 8) = 35 / 40 = 7/8

(iv) 3/48 and 16/9:

(3 × 16) / (48 × 9) = 48 / 432 = 1/9

---

4. Fill in the blanks:

(i) 1/2 × 3/4 =

1/2 × 3/4 = 3/8

(ii) 4/5 × 2/3 × 5/6 =

(4 × 2 × 5) / (5 × 3 × 6) = 40 / 90 = 4/9

(iii) 3/5 × 1/6 =

(3 × 1) / (5 × 6) = 3 / 30 = 1/10

(iv) 4/9 × 18/20 =

(4 × 18) / (9 × 20) = 72 / 180 = 2/5

(v) 2/5 × 10/25 =

(2 × 10) / (5 × 25) = 20 / 125 = 4/25

(vi) 12/13 × 39/72 =

(12 × 39) / (13 × 72) = 468 / 936 = 1/2

---

5. Simplify the following:

(i) 2 × 1 3/4:

Convert 1 3/4 to improper fraction: 7/4
2 × 7/4 = 14/4 = 3 1/2

(ii) 9/5 × 15/3 × 2/7:

(9 × 15 × 2) / (5 × 3 × 7) = 270 / 105 = 18/7 = 2 4/7

(iii) 1 4/5 × 2 2/3 × 3 5/6:

Convert to improper fractions:
1 4/5 = 9/5, 2 2/3 = 8/3, 3 5/6 = 23/6
(9 × 8 × 23) / (5 × 3 × 6) = 1656 / 90 = 18 6/45 = 18 2/15

(iv) 4 × 1 4/9 × 18/24:

Convert 1 4/9 to improper fraction: 13/9
4 × 13/9 × 18/24 = (4 × 13 × 18) / (9 × 24) = 936 / 216 = 4 1/9

---

6. One metre of a piece of cloth costs Rs.50, what will be the cost of 6 1/2 metres of cloth?

Cost of 1 metre = Rs.50
Cost of 6 1/2 metres = 50 × 6 1/2 = 50 × 13/2 = 650/2 = Rs.325

---

7. Ali eats 1/4 kg of mangoes daily. How much does he eat in 8 days?

Ali eats 1/4 kg per day.
In 8 days, he eats = 1/4 × 8 = 8/4 = 2 kg

---

8. A baker bought 30 kg of flour. He uses 5 1/2 kg flour on Sunday and 4 1/2 kg on Monday. How many kilograms of flour was left with him?

Total flour bought = 30 kg
Flour used on Sunday = 5 1/2 = 11/2 kg
Flour used on Monday = 4 1/2 = 9/2 kg
Total flour used = 11/2 + 9/2 = 20/2 = 10 kg
Flour left = 30 - 10 = 20 kg

---

9. Usman's age is 1/3 of his father's age. What is the age of Usman if his father is 36 years old?

Let Usman's age be xxx and his father's age be 36.
x=13×36=12x = 1/3 x 36 = 12x=31×36=12

So, Usman is 12 years old.

---

10. A farmer has 60 kg of animal feed for his cow and a horse. If the cow eats 1/3 of the feed in a day, what quantity do both animals eat in a day?

Cow's daily feed = 1/3 × 60 = 20 kg
Total feed left for the horse = 60 - 20 = 40 kg
So, the horse eats 40 kg in a day.
Both animals eat together = 20 + 40 = 60 kg per day.

Exercise #3.4

1. Tick the right option.

i. 1/2 of 2 is?

- 1/2 * 2 = 1
- Answer: a. 1

ii. 1/4 of 8 is?

- 1/4 * 8 = 2
- Answer: d. 2

iii. 1/4 ÷ 2 is?

- 1/4 * 1/2 = 1/8
- Answer: c. 1/8

iv. 1/4 ÷ 1/4 is?

- 1/4 * 4/1 = 1
- Answer: b. 1

v. What is 1 1/2 ÷ 1 1/4?

- Convert mixed numbers to improper fractions: 3/2 ÷ 5/4
- Invert the divisor and multiply: 3/2 * 4/5 = 12/10 = 6/5
- Answer: d. None of these (Closest option is 1 1/5)

2. Simplify the following:

i. 1/4 ÷ 4

- 1/4 * 1/4 = 1/16

ii. 1/7 ÷ 7

- 1/7 * 1/7 = 1/49

iii. 1/8 ÷ 8

- 1/8 * 1/8 = 1/64

iv. 1/3 ÷ 12

- 1/3 * 1/12 = 1/36

v. 1/8 ÷ 4

- 1/8 * 1/4 = 1/32

Review Exercise

1. Divide these:

(i) 4 5/8 ÷ 4/5:

To divide fractions, multiply the first fraction by the reciprocal of the second.
4 5/8 = 37/8
Reciprocal of 4/5 = 5/4

Now, multiply:
(37/8) × (5/4) = 185/32 = 5 21/32

(ii) 7/13 ÷ 14/13:

Reciprocal of 14/13 = 13/14
Now, multiply:
(7/13) × (13/14) = 7/14 = 1/2

(iii) 27/24 ÷ 3/8:

Reciprocal of 3/8 = 8/3
Now, multiply:
(27/24) × (8/3) = 216/72 = 3

(iv) 25/54 ÷ 5/27:

Reciprocal of 5/27 = 27/5
Now, multiply:
(25/54) × (27/5) = 675/270 = 5/2 = 2 1/2

---

2. Solve these:

(i) 1/6 - 2/5:

Find a common denominator (30):
(1/6) = 5/30
(2/5) = 12/30

Now subtract:
5/30 - 12/30 = -7/30

(ii) 5 4/7 + 7 5/8:

Convert to improper fractions:
5 4/7 = 39/7
7 5/8 = 61/8

Find a common denominator (56):
39/7 = 312/56
61/8 = 427/56

Now add:
312/56 + 427/56 = 739/56 = 13 11/56

(iii) 2/7 × 3/8:

Multiply the fractions:
(2 × 3) / (7 × 8) = 6/56 = 3/28

(iv) 3/22 - 5/11:

Find a common denominator (22):
5/11 = 10/22

Now subtract:
3/22 - 10/22 = -7/22

---

3. Solve these:

(i) 1 1/4 ÷ 1 3/4:

Convert to improper fractions:
1 1/4 = 5/4
1 3/4 = 7/4

Now divide (multiply by the reciprocal):
(5/4) ÷ (7/4) = (5/4) × (4/7) = 20/28 = 5/7

(ii) 7 2/3 ÷ 1 3/4:

Convert to improper fractions:
7 2/3 = 23/3
1 3/4 = 7/4

Now divide (multiply by the reciprocal):
(23/3) ÷ (7/4) = (23/3) × (4/7) = 92/21 = 4 8/21

(iii) 10 1/5 × 1 51/20:

Convert to improper fractions:
10 1/5 = 51/5
1 51/20 = 71/20

Now multiply:
(51/5) × (71/20) = 3621/100 = 36 21/100

(iv) 4/5 × 1 51/20:

Convert 1 51/20 to an improper fraction: 71/20

Now multiply:
(4/5) × (71/20) = 284/100 = 71/25 = 2 21/25

(v) 3 1/8 × 25/24:

Convert 3 1/8 to an improper fraction: 25/8

Now multiply:
(25/8) × (25/24) = 625/192 = 3 49/192

---

4. Word Problems:

(i) Akbar distributes 2/3 of his pencils among his two friends equally. What fraction of pencils does each friend get?

Total pencils distributed = 2/3
Each friend gets:
(2/3) ÷ 2 = 2/3 × 1/2 = 2/6 = 1/3

So, each friend gets 1/3 of the total pencils.

(ii) Murad cuts a 12 1/2 meter long rope into 5 equal parts. How long was each part?

Convert 12 1/2 to an improper fraction:
12 1/2 = 25/2

Now divide by 5:
(25/2) ÷ 5 = 25/2 × 1/5 = 25/10 = 5/2 = 2 1/2 meters

So, each part is 2 1/2 meters long.

(iii) Hira distributed 1 1/2 kg of corns among her 9 friends equally. What was the share of each friend?

Convert 1 1/2 to an improper fraction:
1 1/2 = 3/2

Now divide by 9:
(3/2) ÷ 9 = 3/2 × 1/9 = 3/18 = 1/6

Each friend gets 1/6 kg of corns.

UNIT #4

Exercise #4.1

1. Convert these into decimals:

i. 3/8

To convert a fraction to a decimal, we divide the numerator by the denominator:

3 ÷ 8 = 0.375

ii. 9/16

9 ÷ 16 = 0.5625

iii. 10/12

First, we can simplify the fraction: 10/12 = 5/6

5 ÷ 6 = 0.8333... (repeating decimal)

2. Convert these decimals into fractions:

i. 0.86

This is 86 hundredths, so we can write it as: 86/100. We can simplify this fraction by dividing both the numerator and denominator by 2: 43/50.

ii. 0.99

This is 99 hundredths, so we can write it as: 99/100.

iii. 0.12

This is 12 hundredths, so we can write it as: 12/100. We can simplify this fraction by dividing both the numerator and denominator by 4: 3/25.

Exercise #4.2

1. Compare these numbers by using the symbols <, >, or =.

i. 1.92 < 4.45 ii. 7.78 > 7.17 iii. 5.56 < 5.59 iv. 6.95 > 6.87 v. 4.79 = 4.79 vi. 6.19 < 7.18

2. Arrange these decimal numbers in ascending order.

i. 56.6, 67.8, 89.9 ii. 3.35, 3.37, 3.39 iii. 2.18, 2.43, 2.89

3. Arrange these decimal numbers in descending order.

i. 8.94, 8.84, 7.84 ii. 32.1, 3.21, 2.56 iii. 1.67, 1.19, 1.17

Exercise #4.3

1. Select the correct option.

i. The equivalent decimal to 0.40 is:

- b. 0.04

ii. Which of the following are equivalent decimals?

- b. 0.2 and 0.20

iii. Which of the following are non-equivalent decimals?

- c. 0.65 and 0.0065

2. Answer these in your notebook.

i. How do you find equivalent decimals? You can find equivalent decimals by multiplying or dividing both the numerator and denominator of a decimal fraction by the same non-zero number. For example, 0.2 = 0.20 = 0.200.

ii. Are equivalent fractions and equivalent decimals the same? Yes, equivalent fractions and equivalent decimals represent the same value. They can be obtained by multiplying or dividing both the numerator and denominator of a fraction or decimal by the same non-zero number.

iii. How do we verify whether a decimal number is equivalent to another decimal number? To verify the equivalence of two decimal numbers, we can compare their place values. If the digits in each corresponding place value are the same, then the numbers are equivalent. We can also convert the decimals to fractions with a common denominator and compare the numerators.

3. Write the equivalent decimals of:

i. 2/10

- 0.2

ii. 3/6

- 0.5

iii. 4/8

- 0.5

Yes, all three fractions are equivalent to the same decimal, which is 0.5.

Exercise #4.4

1. Add the following:

i. 4.231 + 3.210

4.231

+ 3.210

7.441

ii. 6.908 + 10.9

6.908

+ 10.900

17.808

iii. 7.301 + 2.531

7.301

+ 2.531

9.832

iv. 29.10 + 31.3

29.10

+ 31.30

60.40

v. 64.20 + 43.34

64.20

+ 43.34

107.54

vi. 11.459 + 2.009

11.459

+ 2.009

13.468

2. Subtract the following:

i. 5.321 - 4.675

  5.321

- 4.675

  0.646

ii. 5.216 - 2.300

  5.216

- 2.300

  2.916

iii. 4.469 - 3.520

  4.469

- 3.520

  0.949

iv. 9.415 - 1.421

  9.415

- 1.421

  7.994

v. 6.348 - 4.874

  6.348

- 4.874

  1.474

vi. 2.275 - 1.51

  2.275

- 1.510

0.765

3. Sara has a 1.4 m long blue ribbon and a 2.1 m long red ribbon. Find:

a. the total length of the ribbons.

- Total length = 1.4 m + 2.1 m = 3.5 m

b. the difference between the lengths of the ribbons.

- Difference = 2.1 m - 1.4 m = 0.7 m

Exercise #4.5

1. Multiply the following:

i. 23.6 × 10

- 236

ii. 7.13 × 10

- 71.3

iii. 8.90 × 10

- 89

iv. 5.67 × 100

- 567

v. 30.1 × 1000

- 30100

vi. 0.02 × 1000

- 20

2. Multiply the following:

i. 65.3 × 5

- 326.5

ii. 4.34 × 14

- 60.76

iii. 5.61 × 71

- 397.11

iv. 1.32 × 82

- 108.24

v. 6.32 × 48

- 303.36

vi. 7.66 × 76

- 581.76

3. Find the product of the following:

i. 3.26 × 2.3

- 7.498

ii. 2.34 × 0.23

- 0.5382

iii. 0.04 × 24.1

- 0.964

iv. 3.32 × 0.53

- 1.7596

v. 6.47 × 4.27

- 27.6909

vi. 9.20 × 1.24

- 11.408

4. The distance from Asim's home to the masjid is 2.15 km and the distance from his home to school is 3 times more than the distance from his home to the masjid. What is the distance from his home to school?

- Distance to school = 3 * 2.15 km = 6.45 km

So, the distance from Asim's home to school is 6.45 km.

Exercise #4.6

1. Divide the following decimals by 10, 100, and 1000:

To divide a decimal by 10, 100, or 1000, we simply move the decimal point to the left by the number of zeros in the divisor.

Example: 23.45 ÷ 10 = 2.345

2. Divide the following decimals:

To divide decimals, we can use long division or convert the divisor to a whole number by multiplying both the dividend and divisor by a suitable power of 10.

Example: 2.10 ÷ 70 = 0.03

3. Solve the following:

These are division problems with decimal divisors. We can use the same approach as in the previous step, multiplying both the dividend and divisor by a power of 10 to make the divisor a whole number.

4.

- Cream in each dessert: 91.8 ÷ 3 = 30.6 grams
- Number of fruit bags: 22.8 ÷ 1.2 = 19 bags
- Rounds completed: 37.5 ÷ 2.5 = 15 rounds
- Distance covered in 10 rounds: 10 × 2.5 = 25 km

5. Sidra is making fruit bags of 1.2 kg each to distribute among needy people during Ramadan. If she has 22.8 kg of fruit altogether, find the number of bags she can make.

- To find the number of bags, we divide the total weight of fruit by the weight of each bag: Number of bags = Total weight of fruit / Weight of each bag = 22.8 kg / 1.2 kg/bag = 19 bags
- Therefore, Sidra can make 19 bags.
- 6. During a week, Umar covered a distance of 37.5 km while jogging in the park. If in one round, he covered a distance of 2.5 km, then find:
- a) How many rounds of the track did he complete? To find the number of rounds, we divide the total distance by the distance covered in one round: Number of rounds = Total distance / Distance per round = 37.5 km / 2.5 km/round = 15 rounds
- b) If he takes 10 rounds, how much distance will he cover? To find the total distance, we multiply the number of rounds by the distance per round: Total distance = Number of rounds * Distance per round = 10 rounds * 2.5 km/round = 25 km
- Therefore, Umar completed 15 rounds and would cover 25 km in 10 rounds.

Exercise #4.7

1. Rope Cutting Problem:

- Total length of the rope = 27.98 m
- Number of equal pieces = 4
- Length of each piece = Total length / Number of pieces = 27.98 m / 4 = 6.995 m

So, the length of each piece of the rope is 6.995 meters.

2. Truck Load Problem:

- Number of granite tiles = 60
- Mass of one granite tile = 5.25 kg
- Total mass of granite tiles = 60 * 5.25 = 315 kg
- Number of marble tiles = 625
- Mass of one marble tile = 6.08 kg
- Total mass of marble tiles = 625 * 6.08 = 3800 kg
- Total mass of all tiles = Mass of granite tiles + Mass of marble tiles = 315 kg + 3800 kg = 4115 kg

So, the total mass of all tiles carried by the truck is 4115 kg.

3. Egg Price Problem:

- Price of 1 dozen eggs = Rs. 46.25
- Price of 605 dozen eggs = 605 * 46.25 = Rs. 27,968.75

So, the price of 605 dozen eggs is Rs. 27,968.75.

Exercise #4.8

Solving the expressions:

i) 12 ÷ 34 × 2 ÷ 2

- Following the order of operations, we do division and multiplication from left to right:
    - 12 ÷ 34 = 0.3529
    - 0.3529 × 2 = 0.7058
    - 0.7058 ÷ 2 = 0.3529

ii) 10 × 9 ÷ 72

- 10 × 9 = 90
- 90 ÷ 72 = 1.25

iii) 23 ÷ 6 - 2

- 23 ÷ 6 = 3.8333 (approximately)
- 3.8333 - 2 = 1.8333

iv) 20 × 6 ÷ 2 - 1

- 20 × 6 = 120
- 120 ÷ 2 = 60
- 60 - 1 = 59

v) 2.2 + 1.4 × 3.2 - 1.0

- 1.4 × 3.2 = 4.48
- 2.2 + 4.48 = 6.68
- 6.68 - 1.0 = 5.68

vi) 1/4 + 8/4 ÷ 1/2 × 1/4 - 1/2

- 8/4 ÷ 1/2 = 8/4 × 2/1 = 4
- 1/4 + 4 × 1/4 - 1/2 = 1/4 + 1 - 1/2
- = 1/4 + 1/2 = 3/4

So, the answers are:

- i) 0.3529
- ii) 1.25
- iii) 1.8333
- iv) 59
- v) 5.68
- vi) ¾

Exercise #4.9

i. 7.859 rounded to the nearest hundredth is 7.86.

ii. 6.786 rounded to the nearest hundredth is 6.79.

iii. 80.345 rounded to the nearest hundredth is 80.35.

iv. 1869.496 rounded to the nearest hundredth is 1869.50.

v. 153.15 rounded to the nearest hundredth is 153.15.

vi. 564.321 rounded to the nearest hundredth is 564.32.

vii. 176.126 rounded to the nearest hundredth is 176.13.

viii. 841.718 rounded to the nearest hundredth is 841.72.

Exercise #4.10

1. Estimate these sums and then verify your estimation by actual calculation.

i. 43.21 + 23.25

- Estimation: 43 + 23 = 66
- Actual calculation: 43.21 + 23.25 = 66.46

ii. 56.56 + 13.34

- Estimation: 57 + 13 = 70
- Actual calculation: 56.56 + 13.34 = 69.9

iii. 32.23 + 45.33

- Estimation: 32 + 45 = 77
- Actual calculation: 32.23 + 45.33 = 77.56

iv. 28.6 + 46.1

- Estimation: 29 + 46 = 75
- Actual calculation: 28.6 + 46.1 = 74.7

v. 11.9 + 77.9

- Estimation: 12 + 78 = 90
- Actual calculation: 11.9 + 77.9 = 89.8

vi. 98.98 + 12.65

- Estimation: 99 + 13 = 112
- Actual calculation: 98.98 + 12.65 = 111.63

2. Estimate these differences and then verify your estimation by actual calculation.

i. 98.96 - 12.60

- Estimation: 99 - 13 = 86
- Actual calculation: 98.96 - 12.60 = 86.36

ii. 56.21 - 31.11

- Estimation: 56 - 31 = 25
- Actual calculation: 56.21 - 31.11 = 25.1

iii. 98.76 - 62.33

- Estimation: 99 - 62 = 37
- Actual calculation: 98.76 - 62.33 = 36.43

iv. 75.45 - 32.28

- Estimation: 75 - 32 = 43
- Actual calculation: 75.45 - 32.28 = 43.17

v. 15.24 - 11.59

- Estimation: 15 - 12 = 3
- Actual calculation: 15.24 - 11.59 = 3.65

vi. 87.49 - 70.67

- Estimation: 87 - 71 = 16
- Actual calculation: 87.49 - 70.67 = 16.82

Exercise #4.11

Q1:

The following shapes are divided into 100 equal parts. Write the percentage of the colored parts for each.

a) The blue part occupies 20 squares out of 100. So, 20% of the shape is colored.

b) The pink part occupies 50 squares out of 100. So, 50% of the shape is colored.

c) The orange part occupies 15 squares out of 100. So, 15% of the shape is colored.

d) The pink part occupies 100 squares out of 100. So, 100% of the shape is colored.

Q2:

Color the squares according to the given percentages.

a) 9%

- Since there are 100 squares, we need to color 9 of them.

b) 40%

- Since there are 100 squares, we need to color 40 of them.

Q3:

Write the following as a percentage.

a) 3 out of 100

- 3%

b) 15 out of 100

- 15%

c) 77 out of 100

- 77%

d) 90 out of 100

- 90%

e) 100 out of 100

- 100%

Exercise #4.12

1. Convert the following percentages into fractions:

i. 55%

- 55/100 = 11/20

ii. 34%

- 34/100 = 17/50

iii. 73%

- 73/100

iv. 67%

- 67/100

v. 29%

- 29/100

vi. 11%

- 11/100

vii. 52%

- 52/100 = 13/25

viii. 89%

- 89/100

2. Convert the following fractions into percentage.

i. 3/25

- (3/25) * 100 = 12%

ii. 8/10

- (8/10) * 100 = 80%

iii. 28/25

- (28/25) * 100 = 112%

iv. 17/100

- 17%

v. 29/25

- (29/25) * 100 = 116%

vi. 11/100

- 11%

vii. 4/5

- (4/5) * 100 = 80%

viii. 49/50

- (49/50) * 100 = 98%

3. Convert the following percentages into decimals.

i. 4%

- 4/100 = 0.04

ii. 60%

- 60/100 = 0.6

iii. 59%

- 59/100 = 0.59

iv. 65%

- 65/100 = 0.65

v. 94%

- 94/100 = 0.94

vi. 26%

- 26/100 = 0.26

vii. 77%

- 77/100 = 0.77

viii. 2%

- 2/100 = 0.02

4. Convert the following decimals into percentages.

i. 5.14

- 5.14 * 100 = 514%

ii. 5.43

- 5.43 * 100 = 543%

iii. 1.72

- 1.72 * 100 = 172%

iv. 3.12

- 3.12 * 100 = 312%

v. 2.28

- 2.28 * 100 = 228%

vi. 2.67

- 2.67 * 100 = 267%

vii. 0.09

- 0.09 * 100 = 9%

viii. 4.78

- 4.78 * 100 = 478%

Exercise #4.13

1. Factory Defects

Problem: A factory produced 900 machines in a certain week. 4% of the machines have defects in them. How many machines have defects?

Solution:

- Total machines produced = 900
- Percentage of defective machines = 4%
- Number of defective machines = 4% of 900 = (4/100) * 900 = 36 machines

So, 36 machines have defects.

2. Laptop Discount

Problem: The original price of a laptop was Rs 85,320. If it was sold at a discount of 40% during a sale, find the price of the laptop during the sale.

Solution:

- Original price of the laptop = Rs 85,320
- Discount = 40%
- Discount amount = 40% of 85,320 = (40/100) * 85,320 = Rs 34,128
- Sale price = Original price - Discount = 85,320 - 34,128 = Rs 51,192

So, the price of the laptop during the sale is Rs 51,192.

3. Ibrahim's Savings

Problem: Ibrahim saved Rs 2500 in a certain month from his pocket money. He spent 32% of his savings distributing stationery items among needy kids. What amount does he have left?

Solution:

- Total savings = Rs 2,500
- Amount spent on stationery = 32% of 2,500 = (32/100) * 2,500 = Rs 800
- Amount left = Total savings - Amount spent = 2,500 - 800 = Rs 1,700

So, Ibrahim has Rs 1,700 left.

Question 4:

There are 740 cars parked in a multi-storey car park having a basement, ground floor, and first floor. If 45% of the cars are parked on the first floor and 20% are on the ground floor, then find:

a) How many cars are parked in the basement? b) How many cars are parked on the ground floor? c) How many cars are parked on the first floor?

Solution:

1. Number of cars on the first floor:

45% of 740 = (45/100) * 740 = 333 cars

2. Number of cars on the ground floor:

20% of 740 = (20/100) * 740 = 148 cars

3. Number of cars in the basement:

Total cars - (Cars on ground floor + Cars on first floor) = 740 - (148 + 333) = 740 - 481 = 259 cars

Therefore:

- a) 259 cars are parked in the basement.
- b) 148 cars are parked on the ground floor.
- c) 333 cars are parked on the first floor.

Exercise #4.14

1. Find the square of the following numbers: 2, 5, 8, 12

- Square of 2: 2 * 2 = 4
- Square of 5: 5 * 5 = 25
- Square of 8: 8 * 8 = 64
- Square of 12: 12 * 12 = 144

2. Write the next five square numbers after 36.

The square of 6 is 36. So, the next five square numbers are:

- Square of 7: 7 * 7 = 49
- Square of 8: 8 * 8 = 64
- Square of 9: 9 * 9 = 81
- Square of 10: 10 * 10 = 100
- Square of 11: 11 * 11 = 121

Exercise #4.15

1. Find the cube of the following numbers: 3, 6, 9, 11.

- Cube of 3: 3 * 3 * 3 = 27
- Cube of 6: 6 * 6 * 6 = 216
- Cube of 9: 9 * 9 * 9 = 729
- Cube of 11: 11 * 11 * 11 = 1331

2. Write the next five cube numbers after 64.

The cube of 4 is 64. So, the next five cube numbers are:

- Cube of 5: 5 * 5 * 5 = 125
- Cube of 6: 6 * 6 * 6 = 216
- Cube of 7: 7 * 7 * 7 = 343

- Cube of 8: 8 * 8 * 8 = 512
- Cube of 9: 9 * 9 * 9 = 729

Review Exercise

1. Encircle the correct options.

i. 45.3 is smaller than c. 46.8

ii. When we divide a decimal by 10, the decimal point moves a. 1 point(s) to the left.

iii. When we multiply a decimal number by d. 1000, the decimal point moves three points to the right.

**iv. 50% of 200 is b. 100

**v. The sum of 3.45 and 6.982 is c. 10.432

2. Write the square notation of the following numbers: 4, 7, 10, 14.

- 4^2
- 7^2
- 10^2
- 14^2

3. Write the cube notation of the following numbers: 2, 6, 8, 13.

- 2^3
- 6^3
- 8^3
- 13^3

4. Compare and write <, > or =.

i. 34.5 > 23.9 ii. 4.88 > 4.89 iii. 5.55 = 5.55 iv. 7.31 < 7.41 v. 6.32 = 6.32 vi. 1.94 < 1.99

5. Compare and arrange these decimal numbers in ascending and descending order.

i. Ascending: 1.35, 2.14, 3.24 Descending: 3.24, 2.14, 1.35

ii. Ascending: 7.44, 7.54, 7.64 Descending: 7.64, 7.54, 7.44

iii. Ascending: 6.63, 6.65, 6.69 Descending: 6.69, 6.65, 6.63

6. Add the following.

i. 65.32 + 89.34 = 154.66 ii. 0.009 + 7.008 = 7.017

7. Subtract the following.

i. 5.982 - 2.198 = 3.784 ii. 15.39 - 7.209 = 8.181

8. Multiply the following.

i. 3.83 × 10 = 38.3 ii. 7.34 × 100 = 734 iii. 9.77 × 1000 = 9770 iv. 4.92 × 27 = 132.84 v. 6.92 × 1.22 = 8.4344 vi. 8.42 × 0.67 = 5.6414

9. Divide the following:

i. 5.61 ÷ 10 = 0.561 ii. 9.63 ÷ 100 = 0.0963 iii. 6.98 ÷ 1000 = 0.00698 iv. 7.89 ÷ 15 = 0.526 v. 9.82 ÷ 2.5 = 3.928 vi. 9.12 ÷ 7.6 = 1.2

10. Convert the following fractions into decimal numbers:

i. 3/7

- 0.428571 (approximately)

ii. 8/5

- 1.6

iii. 3/4

- 0.75

11. Round off the following decimals to the nearest tenth and hundredth:

i. 7.245

- To the nearest tenth: 7.2
- To the nearest hundredth: 7.25

ii. 21.897

- To the nearest tenth: 21.9
- To the nearest hundredth: 21.90

iii. 5.327

- To the nearest tenth: 5.3
- To the nearest hundredth: 5.33

12. Estimate these sums and differences and then verify your estimation by actual calculation:

i. 18.34 + 56.31

- Estimation: 18 + 56 = 74
- Actual calculation: 74.65

ii. 2.87 + 3.17

- Estimation: 3 + 3 = 6
- Actual calculation: 6.04

iii. 94.80 - 89.19

- Estimation: 95 - 90 = 5
- Actual calculation: 5.61

iv. 4.87 - 2.12

- Estimation: 5 - 2 = 3
- Actual calculation: 2.75

13. Convert the following percentages into fractions:

i. 56%

- 56/100 = 14/25

ii. 98%

- 98/100 = 49/50

iii. 22%

- 22/100 = 11/50

14. Convert the following fractions into percentages:

i. 7/25

- (7/25) * 100 = 28%

ii. 15/500

- (15/500) * 100 = 3%

iii. 4/50

- (4/50) * 100 = 8%

15. Convert the following percentages into decimals:

i. 76%

- 76/100 = 0.76

ii. 45%

- 45/100 = 0.45

iii. 72%

- 72/100 = 0.72

16. Convert the following decimals into percentages:

i. 7.89

- 7.89 * 100 = 789%

ii. 0.05

- 0.05 * 100 = 5%

iii. 3.94

- 3.94 * 100 = 394%

17. The capacity of a bottle is 3.6 liters and the capacity of a glass is 0.6 liters. How many glasses can fill one bottle of water?

- Number of glasses = Total capacity of bottle / Capacity of one glass
- Number of glasses = 3.6 / 0.6 = 6 glasses

18. The volume of oil in a tank is 57.2 liters. Find:

a) How much oil will there be in 15 such tanks?

- Total oil = 15 * 57.2 = 858 liters

b) If 57.2 liters oil is distributed among 5 containers, how much oil will be in each container?

- Oil in each container = 57.2 / 5 = 11.44 liters

19. Out of 6340 books in a school library, 20% are storybooks, 65% are textbooks and 15% are other books. Find:

a) the number of storybooks.

- Number of storybooks = 20% of 6340 = (20/100) * 6340 = 1268 books

b) the number of textbooks.

- Number of textbooks = 65% of 6340 = (65/100) * 6340 = 4121 books

c) the number of other books.

- Number of other books = 15% of 6340 = (15/100) * 6340 = 951 books

UNIT #5

Exercise #5.1

1. Toy Cars

Question: The cost of one toy car is Rs 120. What is the cost of 5 such toy cars?

Answer:

- Cost of 1 toy car = Rs 120
- Cost of 5 toy cars = 5 * 120 = Rs 600

2. Handbags

Question: If the price of one handbag is Rs 1900, what is the price of 3 such handbags?

Answer:

- Price of 1 handbag = Rs 1900
- Price of 3 handbags = 3 * 1900 = Rs 5700

3. Blenders

Question: The cost of one blender is Rs 3500. What is the price of 9 such blenders?

Answer:

- Cost of 1 blender = Rs 3500
- Cost of 9 blenders = 9 * 3500 = Rs 31500

4. Dates

Question: The cost of one pack of dates is Rs 540. Find:

- a) the cost of 2 such packs of dates.
- b) the cost of 10 such packs of dates.
- c) the cost of 18 such packs of dates.

Answer:

- a) Cost of 2 packs = 2 * 540 = Rs 1080
- b) Cost of 10 packs = 10 * 540 = Rs 5400
- c) Cost of 18 packs = 18 * 540 = Rs 9720

5. Rice Sacks

Question: The mass of one sack of rice is 5 kg. Find:

- a) the mass of 15 such sacks of rice.
- b) the mass of 22 such sacks of rice.
- c) the mass of 45 such sacks of rice.

Answer:

- a) Mass of 15 sacks = 15 * 5 = 75 kg

- b) Mass of 22 sacks = 22 * 5 = 110 kg
- c) Mass of 45 sacks = 45 * 5 = 225 kg

Exercise #5.2

1. Spoons

Question: Saba bought 12 spoons for Rs 840. What is the cost of one spoon?

Solution:

- Cost of 12 spoons = Rs 840
- Cost of 1 spoon = 840 ÷ 12 = Rs 70

2. Video Games

Question: Hadi bought 4 video games for Rs 8400. What is the price of one video game?

Solution:

- Cost of 4 video games = Rs 8400
- Cost of 1 video game = 8400 ÷ 4 = Rs 2100

3. Chairs

Question: The price of 6 chairs is Rs 6720. What is the price of one chair?

Solution:

- Price of 6 chairs = Rs 6720
- Price of 1 chair = 6720 ÷ 6 = Rs 1120

4. Rice

Question: The cost of 13 kg of rice is Rs 2574. What is the cost of 1 kg of rice?

Solution:

- Cost of 13 kg rice = Rs 2574
- Cost of 1 kg rice = 2574 ÷ 13 = Rs 198

5. Tissue Boxes

Question: The price of 8 tissue boxes is Rs 840. What is the price of one tissue box?

Solution:

- Price of 8 tissue boxes = Rs 840

- Price of 1 tissue box = 840 ÷ 8 = Rs 105

Exercise #5.3

1. Petrol Cost

Question: The cost of 7 liters of petrol is Rs 749. How much will 12 liters of petrol cost?

Solution:

- Cost of 7 liters of petrol = Rs 749
- Cost of 1 liter of petrol = 749 / 7 = Rs 107
- Cost of 12 liters of petrol = 12 * 107 = Rs 1284

2. Wire Length

Question: The length of 5 pieces of wire is 60 meters. Find the length of 23 such pieces of wire.

Solution:

- Length of 5 pieces of wire = 60 meters
- Length of 1 piece of wire = 60 / 5 = 12 meters
- Length of 23 pieces of wire = 23 * 12 = 276 meters

3. Flour Mass

Question: The mass of 12 bags of flour is 96 kg. What will be the mass of 4 such bags of flour?

Solution:

- Mass of 12 bags of flour = 96 kg
- Mass of 1 bag of flour = 96 / 12 = 8 kg
- Mass of 4 bags of flour = 4 * 8 = 32 kg

4. Monthly Salary

Question: The monthly salary of Kamal is Rs 40,650. What is his salary for 12 days?

Solution:

- First, let's find Kamal's daily salary:
    - Daily salary = Monthly salary / Number of days in a month (assuming 30 days)
    - Daily salary = 40,650 / 30 = Rs 1355
- Salary for 12 days = 12 * 1355 = Rs 16,260

5. Fabric Price

Question: The price of 16 m of fabric is Rs 13,600. What will be the price of:

a) 11 m of fabric. b) 25 m of fabric.

Solution:

- Price of 16 m of fabric = Rs 13,600
- Price of 1 m of fabric = 13,600 / 16 = Rs 850

a) Price of 11 m of fabric:

- 11 * 850 = Rs 9,350

b) Price of 25 m of fabric:

- 25 * 850 = Rs 21,250

Exercise #5.4

1. Fill in the blanks with the patterns given below:

i. 5, 10, 15, 20, 25, 30

- The pattern is adding 5 to the previous number.

ii. 29, 26, 23, 20

- The pattern is subtracting 3 from the previous number.

iii. 400, 200, 100, 50, 25

- The pattern is dividing the previous number by 2.

iv. 1, 4, 9, 16, 19, 24

- This pattern doesn't follow a simple arithmetic sequence. It seems to be a mix of square numbers and adding a specific number.

2. Write term-to-term rule then write next three terms of the patterns.

i. 0, 1, 2, 3, ...

- Term-to-term rule: Add 1 to the previous term.
- Next three terms: 4, 5, 6

ii. 2, 4, 6, 8, ...

- Term-to-term rule: Add 2 to the previous term.
- Next three terms: 10, 12, 14

iii. 18, 15, 12, ...

- Term-to-term rule: Subtract 3 from the previous term.
- Next three terms: 9, 6, 3

iv. 1, 4, 9, ...

- Term-to-term rule: Square the position of the term.
- Next three terms: 16, 25, 36

v. 3, 7, 19, ...

- This pattern is a bit more complex. It seems to involve multiplying the previous term by 2 and then adding 1.
- Next three terms: 39, 79, 159

3. Write the first three terms of each of the following patterns.

First Term	Term-to-term rule	First Three Terms
(a) 3	Add 3	3, 6, 9
(b) 7	Add 4	7, 11, 15
(c) 30	Subtract 3	30, 27, 24
(d) 4	Multiply by 2 and then subtract 1	4, 7, 13
(e) 80	Divide by 2 and then add 2	80, 42, 23

4.

a) Rule for the number of white squares:

- The number of white squares in each row increases by 10.
- So, the rule for the white squares is: 10n
    - Where 'n' is the row number.

b) Rule for the number of gray squares:

- The number of gray squares in each row increases by 1, starting from 1 in the first row.
- So, the rule for the gray squares is: n + 10
    - Where 'n' is the row number.

Example: For the 5th row:

- White squares: 10 * 5 = 50

- Gray squares: 5 + 10 = 15

Therefore, the table follows these rules to generate the number of white and gray squares in each row.

Review Exercise

1. Tick (✓) the right option:

(i) One million =

Answer: c. 100 thousand

(ii) Largest 6-digit number is:

Answer: c. 999,999

(iii) Seven hundred seventy-seven thousand and seventy-seven in figure is:

Answer: c. 777,077

(iv) 3674 × 100 =

Answer: c. 367400

(v) 2397 ÷ 10, the remainder is:

Answer: a. 3

(vi) 5760 ÷ 10, the remainder is:

Answer: d. 0

(vii) 5760 ÷ 100, the remainder is:

Answer: c. 60

(viii) 76457 ÷ 1000, the quotient is:

Answer: c. 76

(ix) 102000 ÷ 1000, the quotient is:

Answer: b. 102

(x) The next term of the pattern 4, 9, 16, ... is:

Answer: c. 25

(xi) The term "unitary" is derived from the word "unit" which means:

Answer: iv. 1

(xii) Value of many items =

Answer: iii. Value of one item × Number of many items

(xiii) The cost of one photo frame is Rs. 650. The cost of 3 such photo frames will be _____.

Answer: iv. Rs 1950

(xiv) Value of many items =

Answer: iii. Value of one item × Number of items

(xv) The price of 8 bags of cement is Rs 4640. The price of 11 such bags of cement will be _____.

Answer: iii. Rs 6380

2. Shirt Price

Question: The price of 6 shirts is Rs 4800. What is the price of one shirt?

Solution:

- Price of 6 shirts = Rs 4800
- Price of 1 shirt = 4800 ÷ 6 = Rs 800

So, the price of one shirt is Rs 800.

3. Log Length

Question: If the total length of 12 identical logs is 60 m, find the total length of 32 such logs.

Solution:

First, we need to find the length of one log:

- Length of 12 logs = 60 m
- Length of 1 log = 60 ÷ 12 = 5 m

Now, we can find the length of 32 logs:

- Length of 32 logs = 32 * 5 = 160 m

So, the total length of 32 logs is 160 meters.

UNIT #6

Exercise #6.1

1. Convert the following from kilometers to meters:

- i. 2.5 km
    - 2.5 km * 1000 = 2500 meters

- ii. 9 km
    - 9 km * 1000 = 9000 meters
- iii. 7.5 km
    - 7.5 km * 1000 = 7500 meters
- iv. 0.05 km
    - 0.05 km * 1000 = 50 meters
- v. 20.75 km
    - 20.75 km * 1000 = 20750 meters

2. Convert meters to kilometers:

- i. 175 m
    - 175 m / 1000 = 0.175 km
- ii. 600 m
    - 600 m / 1000 = 0.6 km
- iii. 1200 m
    - 1200 m / 1000 = 1.2 km
- iv. 15 m
    - 15 m / 1000 = 0.015 km
- v. 15075 m
    - 15075 m / 1000 = 15.075 km

3. Convert millimeters to centimeters:

- i. 80 mm
    - 80 mm / 10 = 8 cm
- ii. 160 mm
    - 160 mm / 10 = 16 cm
- iii. 110 mm
    - 110 mm / 10 = 11 cm
- iv. 35 mm
    - 35 mm / 10 = 3.5 cm
- v. 12.5 mm

    - 12.5 mm / 10 = 1.25 cm
- vi. 150 mm
    - 150 mm / 10 = 15 cm
- vii. 50.50 mm
    - 50.50 mm / 10 = 5.05 cm
- viii. 2000 mm
    - 2000 mm / 10 = 200 cm
- ix. 1240 mm
    - 1240 mm / 10 = 124 cm

4. Convert meters to centimeters:

- i. 23 m
    - 23 m * 100 = 2300 cm
- ii. 7.5 m
    - 7.5 m * 100 = 750 cm
- iii. 30 m
    - 30 m * 100 = 3000 cm
- iv. 0.45 m
    - 0.45 m * 100 = 45 cm
- v. 0.25 m
    - 0.25 m * 100 = 25 cm

5. Convert centimeters to meters:

- i. 450 cm
    - 450 cm / 100 = 4.5 m
- ii. 1275 cm
    - 1275 cm / 100 = 12.75 m
- iii. 100 cm
    - 100 cm / 100 = 1 m
- iv. 6.5 cm
    - 6.5 cm / 100 = 0.065 m

- v. 215 cm
    - 215 cm / 100 = 2.15 m

6. Convert centimeters to millimeters:

- i. 0.5 cm
    - 0.5 cm * 10 = 5 mm
- ii. 1.05 cm
    - 1.05 cm * 10 = 10.5 mm
- iii. 150 cm
    - 150 cm * 10 = 1500 mm
- iv. 12.5 cm
    - 12.5 cm * 10 = 125 mm

Exercise #6.2

1. Solve the following:

i. 600 km 330 m 350 cm + 700 km 670 m 275 cm

- 600 km + 700 km = 1300 km
- 330 m + 670 m = 1000 m = 1 km
- 350 cm + 275 cm = 625 cm = 6 m 25 cm
- Total = 1300 km + 1 km + 6 m + 25 cm = 1301 km 6 m 25 cm

ii. 500 m 200 cm 7 mm + 1200 m 800 cm 5 mm

- 500 m + 1200 m = 1700 m
- 200 cm + 800 cm = 1000 cm = 10 m
- 7 mm + 5 mm = 12 mm
- Total = 1700 m + 10 m + 0.012 m = 1710.012 m

iii. 130 m 61 cm 9 mm + 230 m 50 cm 5 mm

- 130 m + 230 m = 360 m
- 61 cm + 50 cm = 111 cm = 1 m 11 cm
- 9 mm + 5 mm = 14 mm
- Total = 360 m + 1 m + 11 cm + 0.014 m = 361.114 m

iv. 3 km 600 m 75 cm + 500 m 35 cm

- 3 km + 0 km = 3 km
- 600 m + 500 m = 1100 m = 1 km 100 m
- 75 cm + 35 cm = 110 cm = 1 m 10 cm
- Total = 3 km + 1 km + 1 km + 100 m + 10 cm = 5 km 110 cm

v. 7 km 300 m 95 cm + 4 km 900 m 45 cm

- 7 km + 4 km = 11 km
- 300 m + 900 m = 1200 m = 1 km 200 m
- 95 cm + 45 cm = 140 cm = 1 m 40 cm
- Total = 11 km + 1 km + 1 km + 200 m + 40 cm = 13 km 240 cm

vi. 25 km 950 m 90 cm + 35 km 400 m 50 cm

- 25 km + 35 km = 60 km
- 950 m + 400 m = 1350 m = 1 km 350 m
- 90 cm + 50 cm = 140 cm = 1 m 40 cm
- Total = 60 km + 1 km + 1 km + 350 m + 40 cm = 62 km 390 cm

2. Subtract the following:

i. 7 km 450 m 15 cm - 3 km 200 m 10 cm

- 7 km - 3 km = 4 km
- 450 m - 200 m = 250 m
- 15 cm - 10 cm = 5 cm
- Answer: 4 km 250 m 5 cm

ii. 25 km 600 m 90 cm - 24 km 500 m 60 cm

- 25 km - 24 km = 1 km
- 600 m - 500 m = 100 m
- 90 cm - 60 cm = 30 cm
- Answer: 1 km 100 m 30 cm

iii. 127 km 600 m 50 cm - 122 km 900 m 60 cm

- 127 km - 122 km = 5 km
- 599 m 150 cm - 900 m 60 cm = 4 km 690 m 90 cm

- Answer: 5 km 4 km 690 m 90 cm = 9 km 690 m 90 cm

iv. 235 km 475 m 55 cm - 210 km 900 m 51 cm

- 235 km - 210 km = 25 km
- 374 m 105 cm - 900 m 51 cm = 24 km 474 m 54 cm
- Answer: 25 km 24 km 474 m 54 cm = 49 km 474 m 54 cm

3. Mazhar, Jamil, and Amjad covered distances of 12 km 400 m, 13 km 500 m, and 10 km respectively on foot. How much distance did they cover at all?

- Total distance = 12 km 400 m + 13 km 500 m + 10 km
- Total distance = 35 km 900 m

4. Saima bought 12 m 500 cm ribbon to make dresses of her daughters. 3 m 200 cm ribbon is left with her. How much ribbon was used to make dresses?

- Ribbon used = Total ribbon - Ribbon left
- Ribbon used = 12 m 500 cm - 3 m 200 cm = 9 m 300 cm

So, 9 m 300 cm of ribbon was used to make dresses.

Exercise #6.3

1. Solve the following:

i. 45min 15sec + 23min 15sec

- 45 min + 23 min = 68 min = 1 hr 8 min
- 15 sec + 15 sec = 30 sec
- Total: 1 hr 8 min 30 sec

ii. 7hr 15min + 5hr 20min

- 7 hr + 5 hr = 12 hr
- 15 min + 20 min = 35 min
- Total: 12 hr 35 min

iii. 6hr 45min 25sec + 3hr 45min 20sec

- 6 hr + 3 hr = 9 hr
- 45 min + 45 min = 90 min = 1 hr 30 min
- 25 sec + 20 sec = 45 sec
- Total: 10 hr 30 min 45 sec

iv. 8hr 25min 25sec + 12hr 55min 40sec

- 8 hr + 12 hr = 20 hr
- 25 min + 55 min = 80 min = 1 hr 20 min
- 25 sec + 40 sec = 65 sec = 1 min 5 sec
- Total: 21 hr 21 min 5 sec

v. 10hr 45min 35sec - 7hr 30min 45sec

- 10 hr - 7 hr = 3 hr
- 45 min - 30 min = 15 min
- 35 sec - 45 sec = -10 sec (borrow 1 min from 15 min)
- Total: 3 hr 14 min 55 sec

vi. 17hr 15min 30sec - 13hr 45min 30sec

- 17 hr - 13 hr = 4 hr
- 14 min 90 sec - 45 min 30 sec = 9 min 60 sec = 10 min
- Total: 4 hr 10 min

2. Jamal's Project Time

- Total days = (2 weeks * 7 days/week) + 3 days + (3 weeks * 7 days/week) + 6 days
- Total days = 14 days + 3 days + 21 days + 6 days = 44 days

Jamal completed both projects in 44 days.

3. Maham's Study Time

- Total study time = 1 hr 30 min + 45 min
- Total study time = 1 hr + (30 min + 45 min) = 1 hr + 75 min = 2 hr 15 min

Maham studies for 2 hours and 15 minutes.

4. Water Tank Filling Time Difference

- Tank A: 1 hr 20 min 15 sec = 80 min 15 sec
- Tank B: 45 min 45 sec
- Difference = 80 min 15 sec - 45 min 45 sec = 34 min 30 sec

Tank A takes 34 minutes and 30 seconds longer to fill than Tank B.

5. Bus Travel Time Difference

- Bus 1: 3 hr 15 min = 195 min

- Bus 2: 2 hr 55 min = 175 min
- Difference = 195 min - 175 min = 20 min

The difference in travel time between the two buses is 20 minutes.

Exercise #6.4

i.

```
 l   ml
 35  50
+ 12  14
-------
 47  64
```

So, 35 liters 50 milliliters + 12 liters 14 milliliters = 47 liters 64 milliliters.

ii.

```
 l   ml
 32  520
+ 17  215
-------
 49  735
```

Exercise #6.5

1. Solve these questions:

i.

```
 l   ml
 35  46
+ 12  34
-------
 47  80
```

ii.

```
 l   ml
 42  36
```

+ 32 43

----

 74 79

iii.

 l   ml

 19 15

+ 09 10

----

 28 25

2. Solve the following:

i.

 l   ml

 5 898

+ 3 695

----

 8 1593

Since 1000 ml = 1 l, we can rewrite 1593 ml as 1 l 593 ml. So, the final answer is 9 l 593 ml.

ii.

 l   ml

 7 996

+ 3 780

----

 10 1776

Since 1000 ml = 1 l, we can rewrite 1776 ml as 1 l 776 ml. So, the final answer is 11 l 776 ml.

iii.

 l   ml

 3 983

+ 4 012

----

7 995

3. Write these in vertical form, then solve:

i. 8 l 870 ml - 3 l 360 ml

l ml

8 870

- 3 360

---

5 510

ii. 6 l 220 ml - 4 l 110 ml

l ml

6 220

- 4 110

---

2 110

iii. 18 l 825 ml - 6 l 815 ml

l ml

18 825

- 6 815

---

12 10

iv. 5 l 820 ml - 3 l 320 ml

l ml

5 820

- 3 320

---

2 500

Review Exercise

1. Bucket Capacity

Question: Raheem's family has 2 buckets in their bathroom. One bucket holds 4 liters 450 ml of water while the other holds 5 liters 240 ml. What is the total capacity of the two buckets?

Solution:

- Bucket 1: 4 liters 450 ml
- Bucket 2: 5 liters 240 ml

Let's add the liters and milliliters separately:

- Liters: 4 + 5 = 9 liters
- Milliliters: 450 + 240 = 690 ml

Since 1000 ml = 1 liter, we can convert 690 ml to 0.69 liters.

So, the total capacity is 9.69 liters.

2. Water Left

Question: Saad took 775 ml of drinking water to school. He drank 420 ml at break. How much water is left?

Solution:

- Water taken = 775 ml
- Water drank = 420 ml
- Water left = Water taken - Water drank = 775 ml - 420 ml = 355 ml

So, 355 ml of water is left.

3. Fuel Tank

Question: The fuel tank of a bus can hold 98 liters of diesel. There is 22 liters of diesel in the tank. How much more diesel is needed to fill the tank?

Solution:

- Tank capacity = 98 liters
- Diesel in tank = 22 liters
- Diesel needed to fill = Tank capacity - Diesel in tank = 98 liters - 22 liters = 76 liters

So, 76 liters more diesel is needed to fill the tank.

4. Honey in Bottles

Question: There is 950 ml of honey in one bottle and 550 ml in another bottle. Find the total amount of honey in the two bottles.

Solution:

- Honey in bottle 1 = 950 ml
- Honey in bottle 2 = 550 ml
- Total honey = 950 ml + 550 ml = 1500 ml

So, there is 1500 ml of honey in total.

UNIT #7

Exercise #7.1

1. Find the perimeter of these rectangles by using the formula.

Perimeter of a rectangle = 2 × (length + width)

i.

- Length = 11 m
- Width = 4 m
- Perimeter = 2 × (11 m + 4 m) = 2 × 15 m = 30 m

ii.

- Length = 10 m
- Width = 3 cm
- Perimeter = 2 × (10 m + 3 m) = 2 × 13 m = 26 m

iii.

- Length = 6 m
- Width = 4 m
- Perimeter = 2 × (6 m + 4 m) = 2 × 10 m = 20 m

iv.

- Length = 7 m
- Width = 3 cm
- Perimeter = 2 × (7 m + 3 m) = 2 × 10 m = 20 m

v.

- Length = 2 m

- Width = 2 m (since it's a square)
- Perimeter = 2 × (2 m + 2 m) = 2 × 4 m = 8 m

vi.

- Length = 3 m
- Width = 3 m (since it's a square)
- Perimeter = 2 × (3 m + 3 m) = 2 × 6 m = 12 m

2. Find the perimeter of the squares having the following length by using the formula.

Perimeter of a square = 4 × side

i. Side = 5 cm

- Perimeter = 4 × 5 cm = 20 cm

ii. Side = 2.8 cm

- Perimeter = 4 × 2.8 cm = 11.2 cm

iii. Side = 9.1 m

- Perimeter = 4 × 9.1 m = 36.4 m

iv. Side = 7 cm

- Perimeter = 4 × 7 cm = 28 cm

3. Find the perimeter of the rectangles having the following length and width by using the formula.

i. L = 4 cm, W = 2 cm

- Perimeter = 2 × (4 cm + 2 cm) = 2 × 6 cm = 12 cm

ii. L = 6 m, W = 4 m

- Perimeter = 2 × (6 m + 4 m) = 2 × 10 m = 20 m

iii. L = 5 m, W = 3 m

- Perimeter = 2 × (5 m + 3 m) = 2 × 8 m = 16 m

iv. L = 8 cm, W = 5 cm

- Perimeter = 2 × (8 cm + 5 cm) = 2 × 13 cm = 26 cm

Exercise #7.2

1. Find the area of these squares by using the formula.

Formula for the area of a square: Area = side × side

i. Side = 6 cm

- Area = 6 cm × 6 cm = 36 sq cm

ii. Side = 4 m

- Area = 4 m × 4 m = 16 sq m

iii. Side = 3 cm

- Area = 3 cm × 3 cm = 9 sq cm

iv. Side = 8 m

- Area = 8 m × 8 m = 64 sq m

v. Side = 2 cm

- Area = 2 cm × 2 cm = 4 sq cm

2. Find the area of these rectangles by using the formula.

Formula for the area of a rectangle: Area = length × width

i.

- Length = 12 cm
- Width = 5 cm
- Area = 12 cm × 5 cm = 60 sq cm

ii.

- Length = 11 m
- Width = 6 m
- Area = 11 m × 6 m = 66 sq m

iii.

- Length = 9 m
- Width = 3 m
- Area = 9 m × 3 m = 27 sq m

iv.

- Length = 12 cm
- Width = 7 cm
- Area = 12 cm × 7 cm = 84 sq cm

3. Find the area of the squares having the following length by using the formula.

i. Side = 2 cm

- Area = 2 cm × 2 cm = 4 sq cm

ii. Side = 8 m

- Area = 8 m × 8 m = 64 sq m

iii. Side = 4 cm

- Area = 4 cm × 4 cm = 16 sq cm

iv. Side = 12 m

- Area = 12 m × 12 m = 144 sq m

4. Find the area of the rectangles having the following length and width by using the formula.

i. L = 5 cm, W = 1 cm

- Area = 5 cm × 1 cm = 5 sq cm

ii. L = 9 m, W = 2 m

- Area = 9 m × 2 m = 18 sq m

iii. L = 7 m, W = 4 m

- Area = 7 m × 4 m = 28 sq m

iv. L = 11 cm, W = 6 cm

- Area = 11 cm × 6 cm = 66 sq cm

Exercise #7.3

1. Square-Shaped Hall

Given: Length of side = 28 meters

Perimeter of a square = 4 × side

- Perimeter = 4 × 28 m = 112 m

Area of a square = side × side

- Area = 28 m × 28 m = 784 sq m

2. Square-Shaped Hall

Given: Perimeter = 5 meters

Perimeter of a square = 4 × side

- 5 m = 4 × side
- Side = 5 m / 4 = 1.25 m

Area of a square = side × side

- Area = 1.25 m × 1.25 m = 1.5625 sq m

3. Rectangular Ground

Given: Perimeter = 32 meters, Width = 6 m

Perimeter of a rectangle = 2 × (length + width)

- 32 m = 2 × (length + 6 m)
- 16 m = length + 6 m
- Length = 16 m - 6 m = 10 m

4. Rectangular Masjid

Given: Length = 40 m, Width = 22 m, Cost of tiling = Rs 630/sq m

Area of a rectangle = length × width

- Area = 40 m × 22 m = 880 sq m

Cost of tiling = Area × Rate per square meter

- Cost = 880 sq m × Rs 630/sq m = Rs 554,400

5. Square-Shaped Field

Given: Length of side = 21 meters, Cost of fencing = Rs 280/m, Cost of cementing = Rs 325/sq m

a) Cost of fencing:

- Perimeter = 4 × 21 m = 84 m
- Cost = 84 m × Rs 280/m = Rs 23,520

b) Cost of cementing:

- Area = 21 m × 21 m = 441 sq m
- Cost = 441 sq m × Rs 325/sq m = Rs 143,175

6. Hall with a Stage

Given:

- Total length of the hall = 25 m
- Width of the stage = 5 m
- Length of the hall (excluding the stage) = 25 m - 5 m = 20 m

- Width of the hall = 15 m

Area of the stage:

- Area = length × width = 5 m × 15 m = 75 sq m

Area of the remaining hall:

- Area = length × width = 20 m × 15 m = 300 sq m

7. Path in a Field

Given:

- Length of the field = 150 m
- Width of the field = 75 m
- Width of the path = 2 m

Area of the field:

- Area = length × width = 150 m × 75 m = 11,250 sq m

Area of the path:

- Length of the path = 150 m
- Width of the path = 2 m
- Area of the path = 150 m × 2 m = 300 sq m

Area of the grassy portion:

- Area of the grassy portion = Area of the field - Area of the path
- Area of the grassy portion = 11,250 sq m - 300 sq m = 10,950 sq m

8. Divided Rectangular Field

Given:

- Length of the field = 40 m
- Width of the field = 20 m

The field is divided into four equal plots.

Area of each plot:

- Area = (Length of the field / 2) × (Width of the field / 2)
- Area = (40 m / 2) × (20 m / 2) = 20 m × 10 m = 200 sq m

Area of the whole field:

- Area = Length × Width = 40 m × 20 m = 800 sq m

9. Rectangular Field with a Path

Given:

- Length of the field = 40 m
- Width of the field = 20 m
- Width of the path = 2 m

Area of the path:

- Length of the path = 40 m
- Width of the path = 2 m
- Area of the path = 40 m × 2 m = 80 sq m

Therefore, the area of the path is 80 square meters.

Exercise #7.4

1. Calculate the area of the following triangles:

i.

- Base = 3 ft
- Height = 6 ft
- Area = (1/2) × 3 ft × 6 ft = 9 sq ft

ii.

- Base = 10 ft
- Height = 8 ft
- Area = (1/2) × 10 ft × 8 ft = 40 sq ft

iii.

- Base = 6 cm
- Height = 3 cm
- Area = (1/2) × 6 cm × 3 cm = 9 sq cm

iv.

- Base = 10 cm
- Height = 8 cm

- Area = (1/2) × 10 cm × 8 cm = 40 sq cm

Review Exercise

1. Choose the correct option.

i. A rectangular cardboard of length 10 cm and perimeter 32 cm has width:

- b. 8 cm

Explanation:

- Perimeter of a rectangle = 2 × (Length + Width)
- 32 cm = 2 × (10 cm + Width)
- 16 cm = 10 cm + Width
- Width = 6 cm

ii. The area of a square of length of side 6 cm is:

- c. 36 cm^2

Explanation:

- Area of a square = side × side
- Area = 6 cm × 6 cm = 36 cm^2

iii. The expenditure of paint at the rate of Rs. 100 per square metre in painting a rectangular wall of length 10 metre and width 4 metre is:

- b. Rs. 4000

Explanation:

- Area of the wall = length × width = 10 m × 4 m = 40 sq m
- Cost of painting 1 sq m = Rs 100
- Total cost = 40 sq m × Rs 100/sq m = Rs 4000

iv. What will be the area of a square if the length of its one side is 1 cm?

- a. 1 cm^2

Explanation:

- Area of a square = side × side
- Area = 1 cm × 1 cm = 1 cm^2

v. Sum of all sides of a rectangular region is called:

- b. perimeter

2. Courtyard of a house is 10.5 metres long and 7.5 metres wide, find its area.

- Area of a rectangle = length × width
- Area = 10.5 m × 7.5 m = 78.75 sq m

3. Find the area of square ground having length of side as 36 metres.

- Area of a square = side × side
- Area = 36 m × 36 m = 1296 sq m

4. The perimeter of a square garden is 40 metre. Find its area.

- Perimeter of a square = 4 × side
- 40 m = 4 × side
- Side = 10 m
- Area of a square = side × side
- Area = 10 m × 10 m = 100 sq m

UNIT #8

Exercise #8.1

Question 1: Identify and count lines of symmetry in the given 2-D shapes.

i. Square

A square has 4 lines of symmetry.

- Vertical line of symmetry (L1)
- Horizontal line of symmetry (L2)
- Diagonal line of symmetry (L3)
- Diagonal line of symmetry (L4)

ii. X-shaped figure

This shape has 4 lines of symmetry.

- Vertical line of symmetry (L1)
- Horizontal line of symmetry (L2)
- Diagonal line of symmetry (L3)

- Diagonal line of symmetry (L4)

Exercise #8.2

Question 1:

Shape	Name	Number of Faces	Number of Vertices
Cube	Cube	6	8
Cuboid	Cuboid	6	8
Pyramid	Pyramid	5	5

2. Identify the given nets:

(a) Cube

This net has 6 equal squares, forming a cube.

(b) None

This arrangement cannot fold into a 3D shape.

(c) None

This does not form a 3D shape.

(d) Cuboid

This net has rectangles, forming a cuboid.

(e) Pyramid

This is a net of a pyramid with a square base and triangular sides.

(f) None

This does not form a valid 3D shape.

(g) None

Although it has squares, this arrangement cannot fold into a cube or any valid 3D shape.

(h) None

This does not form a valid 3D shape.

Exercise #8.3

1. Fill in the blanks:

i. The angle of measure greater than 0° but less than 90° is called an acute angle. ii. The angle of measure greater than 90° but less than 180° is called an obtuse angle. iii. The angle of measure greater than 180° but less than 360° is called a reflex angle. iv. The complement of an angle of measure 75° is 15°. v. The supplement of an angle of measure 75° is 105°.

2. Identify the angle AOC as right, acute, obtuse and reflex angle:

- a. Acute angle
- b. Right angle
- c. Obtuse angle
- d. Reflex angle

3. Write the measures of the complement of the following angles:

- i. 45°: Complement = 90° - 45° = 45°
- ii. 60°: Complement = 90° - 60° = 30°
- iii. 30°: Complement = 90° - 30° = 60°
- iv. 75°: Complement = 90° - 75° = 15°
- v. 25°: Complement = 90° - 25° = 65°

4. Write the measures of the supplement of the following angles:

- i. 20°: Supplement = 180° - 20° = 160°
- ii. 50°: Supplement = 180° - 50° = 130°
- iii. 45°: Supplement = 180° - 45° = 135°
- iv. 110°: Supplement = 180° - 110° = 70°
- v. 175°: Supplement = 180° - 175° = 5°

5. Choose a pair of complementary angles:

- iii. 75°, 25° (Since 75° + 25° = 90°)

6. Choose a pair of supplementary angles:

- ii. 30°, 150° (Since 30° + 150° = 180°)

Exercise #8.4

Let's fill in the blanks:

1.

- i. One side of an equilateral triangle is 5cm, then the other two sides will be 5 cm and 5 cm.
- ii. The unit of measurement of an angle is degree.
- iii. A ray has a beginning point but no end point.
- iv. Obtuse angle has a measure greater than 90° but less than 180°.
- v. The sum of two supplementary angles is 180°.
- vi. In a right triangle, measure of the largest angle is 90°.
- vii. If one of the angles of a triangle is 110°, then the triangle is called an obtuse triangle.
- viii. In a square and rectangle, opposite angles are equal.
- ix. In a parallelogram, opposite angles are equal.
- x. In a cube, the breadth, length and height are equal.

2. Tick (✓) the right option.
    - i. A triangle has b. 3 sides.
    - ii. Which is a measure of reflex angle? c. 210°
    - iii. A quadrilateral has c. 4 sides.
    - iv. In a cube, there are b. 6 faces.
    - v. In a pyramid, there are b. 5 edges.
3. Identify the types of triangles.
    - a. Acute-angled triangle (all angles less than 90°)
    - b. Right-angled triangle (one angle is 90°)
    - c. Obtuse-angled triangle (one angle is greater than 90°)
    - d. Right-angled triangle (one angle is 90°)

UNIT #9

Exercise #9.1

Let's fill in the blanks and solve the problems:

1. Fill in the blanks:

i. Average is obtained by dividing the sum of values by their number. ii. Average of first three odd numbers is 5. iii. Average of first three even numbers is 4. iv. Sum of 4 values is 20. Then their average is 5. v. Sum of some values is 625, while their average is 25, then the number of values is 25.

2. Calculate the average of the set of values given below:

i. 3, 5, 9, 15, 19

- Sum = 3 + 5 + 9 + 15 + 19 = 51
- Average = Sum / Number of values = 51 / 5 = 10.2

ii. 1, 2, 3, 4, 5, 6

- Sum = 1 + 2 + 3 + 4 + 5 + 6 = 21
- Average = 21 / 6 = 3.5

iii. 1.5, 2.5, 3.75, 7.25, 0.25

- Sum = 1.5 + 2.5 + 3.75 + 7.25 + 0.25 = 15.25
- Average = 15.25 / 5 = 3.05

iv. 5.5, 2.75, 7.5, 5.75, 4.5

- Sum = 5.5 + 2.75 + 7.5 + 5.75 + 4.5 = 26
- Average = 26 / 5 = 5.2

v. 5, 3, 4, 2, 1

- Sum = 5 + 3 + 4 + 2 + 1 = 15
- Average = 15 / 5 = 3

vi. 3, 8, 8, 10, 3

- Sum = 3 + 8 + 8 + 10 + 3 = 32
- Average = 32 / 5 = 6.4

vii. 3, 8, 7, 12, 0, 4, 1

- Sum = 3 + 8 + 7 + 12 + 0 + 4 + 1 = 35
- Average = 35 / 7 = 5

viii. 90, 92, 84, 19, 13

- Sum = 90 + 92 + 84 + 19 + 13 = 298
- Average = 298 / 5 = 59.6

ix. 4.7, 9.3, 1.5

- Sum = 4.7 + 9.3 + 1.5 = 15.5
- Average = 15.5 / 3 = 5.17

x. 5, 7, 9, 3, 8, 7, 5, 6

- Sum = 5 + 7 + 9 + 3 + 8 + 7 + 5 + 6 = 50
- Average = 50 / 8 = 6.25

3. What are the average runs scored by a batsman in the four one-day matches?

- Total runs = 32 + 12 + 19 + 61 = 124 runs
- Average runs = 124 / 4 = 31 runs

4. What is the average monthly income of a labourer, if he earns Rs. 174,000 in a year?

- Average monthly income = Total yearly income / 12 months
- Average monthly income = 174000 / 12 = Rs. 14,500

5. What are the average marks obtained by a student, if he obtained 35, 46, 40, 25, 45, 38 in six tests?

- Total marks = 35 + 46 + 40 + 25 + 45 + 38 = 229
- Average marks = 229 / 6 = 38.17

6. Attendance of pupils of a class is as follows: Monday 41, Tuesday 44, Wednesday 39, Thursday 41 and on Friday 45. Find the average daily attendance of the class.

- Total attendance = 41 + 44 + 39 + 41 + 45 = 210
- Average daily attendance = 210 / 5 = 42

7. The rainfall recorded in Muzzafarabad from July to December is as follows: 3.1 cm, 4.2 cm, 5.8 cm, 11.1 cm, 4.6 cm, and 7.8 cm. Find the average rainfall for these 6 months.

- Total rainfall = 3.1 + 4.2 + 5.8 + 11.1 + 4.6 + 7.8 = 36.6 cm
- Average rainfall = 36.6 / 6 = 6.1 cm

8. Find the total income in 9 months of a labourer, if his average income is Rs. 14,000.

- Total income = Average income × Number of months
- Total income = 14000 × 9 = Rs. 126,000

9. Find the average of first five multiples of 2.

- First five multiples of 2: 2, 4, 6, 8, 10
- Sum = 2 + 4 + 6 + 8 + 10 = 30
- Average = 30 / 5 = 6

Exercise #9.2

1. Number of Goals Scored

Understanding the Data:

- We have four matches: First, Second, Third, and Fourth.
- The number of goals scored in each match is given.

Creating the Bar Graph:

1. Label the axes:
    - x-axis: Label it "Match Number" with categories: First, Second, Third, Fourth
    - y-axis: Label it "Number of Goals" with a scale of 1 square representing 1 goal.
2. Draw the bars:
    - For the first match, draw a bar of height 1 square.
    - For the second match, draw a bar of height 4 squares.
    - For the third match, draw a bar of height 3 squares.
    - For the fourth match, draw a bar of height 1 square.

2. Apples Eaten by Students

Understanding the Data:

- We have four students: Ahad, Ali, Rehan, and Mukhtar.
- The number of apples eaten by each student is given.

Creating the Bar Graph:

1. Label the axes:
    - x-axis: Label it "Student" with categories: Ahad, Ali, Rehan, Mukhtar
    - y-axis: Label it "Number of Apples" with a scale of 1 square representing 1 apple.
2. Draw the bars:
    - For Ahad, draw a bar of height 2 squares.
    - For Ali, draw a bar of height 3 squares.
    - For Rehan, draw a bar of height 3 squares.
    - For Mukhtar, draw a bar of height 4 squares.

Review Exercise

1. Fill in the blanks:

i. We can evaluate and observe the efficiency of something by calculating the average. ii. Average is obtained by dividing the sum of values by their number. iii. In a bar graph, one block can represent any number of items according to scale. iv. In a bar graph, information is represented by bars. v. In a vertical bar graph, information is represented by bars, along the y-axis.

2. Tick (✓) the right option:

i. Average is obtained by d. dividing the sum of values by their numbers. ii. In a block graph, one item represents a. one block. iii. In a vertical bar graph, the scale may be taken as: d. all are correct iv. In a horizontal bar graph, bars are drawn along the: a. x-axis v. In a vertical bar graph, bars are drawn along the: b. y-axis

3. Find the average of the following:

- i. First five natural numbers: 1, 2, 3, 4, 5
    - Sum = 15
    - Average = 15 / 5 = 3
- ii. First four multiples of 3: 3, 6, 9, 12
    - Sum = 30
    - Average = 30 / 4 = 7.5
- iii. First five odd numbers: 1, 3, 5, 7, 9
    - Sum = 25
    - Average = 25 / 5 = 5
- iv. First five even numbers: 2, 4, 6, 8, 10
    - Sum = 30
    - Average = 30 / 5 = 6

4. Ahmed paid Rs. 12,000 for six months as his fee in the school, find his monthly fee.

- Monthly fee = Total fee / Number of months = 12000 / 6 = Rs. 2000

5. Ali Raza earned Rs. 72,000 in 9 months. Find his average monthly income.

- Average monthly income = Total income / Number of months = 72000 / 9 = Rs. 8000

6. In breakfast, 8 children eat butter, 6 eat cheese, 10 eat yogurt and 6 eat jam with bread. Represent this information by a horizontal bar graph.

[You can use graph paper or a digital tool to create this bar graph. Label the x-axis with food items and the y-axis with the number of children.]

7. A bag contains 8 red marbles and 4 blue marbles. What is the probability of picking a red marble?

- Total marbles = 8 + 4 = 12
- Probability of picking a red marble = Number of red marbles / Total marbles = 8/12 = 2/3

8. A spinner is divided into 6 equal sections labeled from 1 to 6. What is the probability of spinning an even number?

- Even numbers on the spinner: 2, 4, 6
- Total numbers on the spinner: 6
- Probability of spinning an even number = 3/6 = 1/2

9. There are 5 green, 3 yellow, and 2 blue balloons in a bag. What is the probability of selecting a yellow balloon?

- Total balloons = 5 + 3 + 2 = 10
- Probability of selecting a yellow balloon = 3/10

10. A jar contains 3 red, 2 blue, and 5 green candies. What is the probability of picking a blue candy?

- Total candies = 3 + 2 + 5 = 10
- Probability of picking a blue candy = 2/10 = 1/5

11. A deck of cards contains 52 cards. What is the probability of drawing a diamond?

- Number of diamond cards = 13
- Total cards = 52
- Probability of drawing a diamond = 13/52 = 1/4