



Contents

1. Fractions	1
2. Percentage	16
• Topical Practice I	34
3. Ratios	47
4. Algebra	60
5. Speed	71
• Topical Practice II	83
6. Circle	100
7. Triangles and Four-Sided Figures	109
• Topical Practice III	115
8. Area and Perimeter of Composite Figures	128
9. Volume of Cubes and Cuboids	134
10. Nets and Solid Figures	142
• Topical Practice IV	145
11. Pie Charts	164
• Mock Preliminary Examination	171
Full Solutions	187

4 Express $\left(\frac{5}{12} + \frac{2}{9} \times \frac{9}{12}\right) + \left(\frac{1}{10} - \frac{6}{7} \times \frac{7}{10}\right)$ in its simplest form.

Ans: _____

Short Answer Questions

5 Keith spent $\frac{1}{4}$ of his money on a Mathematics textbook and $\frac{2}{3}$ of his remaining money on a bag. What fraction of his money did Keith have left?

Ans: _____

6 Edmund spent $\frac{1}{6}$ of his money on a hat and \$45 on a shirt. If he had \$180 at first, how much money did Edmund have left?

Ans: _____

28

Penny did a survey on how the pupils in her school travel to school and the following are her findings.

- ◆ 0.27 of the pupils take the public transport.
- ◆ 40% of the pupils take the school bus.
- ◆ 60% of the remaining pupils walk to school.
- ◆ The rest go to school by car.

If 66 pupils go to school by car, how many pupils took part in the survey?

Ans: _____

29

There are 200 books and magazines in Claire's house. 20% of them are fiction books, 30% of the remainder are magazines and the rest are non-fiction books. Claire decides to lend Joel a few non-fiction books. Joel has no non-fiction books at first. How many per cent of the total number of books and magazines did Claire lend to Joel if Claire had 80% more non-fiction books than Joel in the end?

Ans: _____

5 $10\frac{2}{3} + 3\frac{4}{5} - 2\frac{1}{8} = \underline{\hspace{2cm}}$

(1) $\frac{89}{120}$

(2) $12\frac{41}{120}$

(3) $10\frac{1}{3}$

(4) $127\frac{1}{120}$ []

6 $\frac{2}{11} \times \frac{1}{3} \div \frac{3}{22} = \underline{\hspace{2cm}}$

(1) $\frac{5}{9}$

(2) $\frac{1}{121}$

(3) $\frac{121}{23}$

(4) $\frac{4}{9}$ []

7 50% of 18 is equal to _____% of 72.

(1) 9%

(2) 10%

(3) 12.5%

(4) 13% []

8 Express 250 m as a percentage of 2.5 km.

(1) 10%

(2) 15%

(3) 20%

(4) 25% []

9 Girls make up 40% of the class. If there are 5 more boys than girls, find the number of boys in the class.

(1) 10

(2) 15

(3) 25

(4) 50 []

10 An empty box was filled with 10 nails each of mass 0.2 kg. If the mass of the empty box was 2 kg, what would be the percentage decrease in its mass if 6 nails were removed from the box?

(1) 30%

(2) 35%

(3) 60%

(4) 75% []

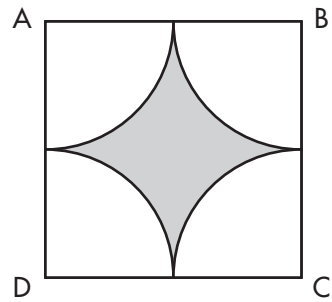
Finding Speed

1 Calculate the following speeds.

	Distance	Time	Speed
(a)	35 km	1 h	km/h
(b)	20 km	2 h	km/h
(c)	36 m	6 s	m/s
(d)	125 km	5 h	km/h
(e)	129 m	10 s	m/s
(f)	6 km	6 min	km/h
(g)	220 m	20 s	m/min
(h)	1 km	5 s	km/h
(i)	0.5 km	10 min	m/min
(j)	10.2 km	15 min	km/h
(k)	306 km	10 h	m/s

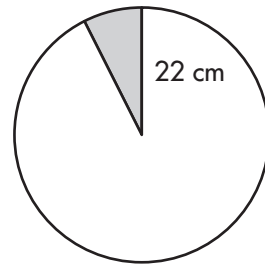
Problem Sums

- 4** ABCD is a square with an area of 256 cm^2 .
- (a) Find the area of the shaded part.
- (b) Find the perimeter of the shaded part.
- (Take $\pi = 3.14$.)



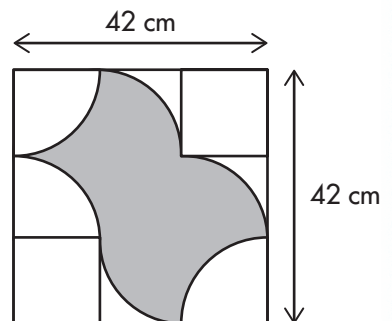
Ans: _____

- 5** The area of the shaded part is $\frac{1}{9}$ of the circle. Find the area of the shaded part.
- (Take $\pi = 3.14$.)



Ans: _____

- 6** Find
- (a) the area, and
- (b) perimeter of the shaded region. (Take $\pi = 3.14$.)



Ans: _____