

Attempt all the questions in both sections.

SECTION A

1. Evaluate: $5 - (-12) \times 3 - 24 \div 6$.
2. Simplify: $\frac{2}{5} \div \frac{3}{5} - 2\frac{1}{4} \times 3\frac{4}{6}$.
3. Find the value of x if $34_x = 19$.
4. If I had 15 less books than I have, I should have only a quarter as many as I have now. How many do I have now?
5. Find the HCF and LCM of 18, 45 and 63.
6. The bearing of town A from town B is 060° . Draw a diagram to show the positions of town A and B. Give the bearing of town B from town A.
7. I have a large jug which holds 2 litres of water. I have a small cup which holds a $\frac{1}{4}$ of a litre. How many times can I fill my small cup from my jug?
8. Express the following recurring decimal as a fraction: $0.4545\dots\dots\dots$
9. If $a = 5$, $b = -8$, $c = -3$ and $d = 9$, find the value of $b - \frac{c - 2ab}{db^2}$.
10. Express 360 and 72 each as a product of its prime factors. Hence give the HCF of 360 and 72.

SECTION B

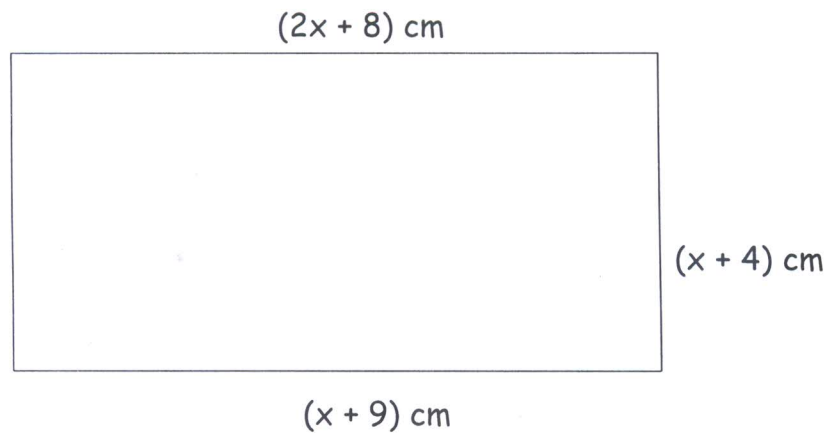
11. In a class of 60 children, 25 take both milk (M) and porridge (P), 40 take porridge, x take milk only and 3 of them take neither of the foods. Represent this information on a Venn diagram.

(i) Find the value of x .

(ii) How many children take one type of food only?

12. Using a ruler and a pair of compasses only, construct a triangle ABC in which angle $ABC = 60^\circ$, $AB = 8$ cm and $BC = 6$ cm. Find the length AC and perimeter of triangle ABC .

13. The figure below is of a rectangle.



(i) Find the value of x ,

(ii) Calculate the perimeter and area of the rectangle.

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$$\begin{aligned}
 1. \quad 5 - (-12) \times 3 - 24 \div 6 &= 5 + 36 - 4 \\
 &= 5 - 40 + 4 \\
 &= -35 + 4
 \end{aligned}$$

M₁ M₁
M₁
A1 04

$$\begin{aligned}
 2. \quad \frac{2}{5} \div \frac{3}{5} - \frac{9}{4} \times \frac{22}{6} &= \frac{2}{5} \times \frac{5}{3} - \frac{9}{4} \times \frac{11}{3} \\
 &= \frac{2}{3} - \frac{33}{4} \\
 &= \frac{8 - 99}{12} \\
 &= -\frac{91}{12} = -7\frac{7}{12}
 \end{aligned}$$

M₁ M₁
M₁
A1 04

$$\begin{aligned}
 3. \quad (3x^1) + (4x^0) &= 19 \quad M \\
 3x + 4 &= 19 \quad M \\
 3x &= 15 \quad M \\
 x &= 5 \quad A1
 \end{aligned}$$

04

$$4. \quad x - 15 = \frac{1}{4}x \quad M$$

$$\begin{aligned}
 \frac{x}{1} - \frac{1}{4}x &= 15 \quad M \\
 \frac{4x - 1x}{4} &= 15 \quad M
 \end{aligned}$$

$$3x = 60$$

$$x = 20 \quad A1$$

04

2	18	45	63	HCF = 3x3 = 9 LCM = 2x3x3x5x7 = 630
3	9	45	63	
3	3	15	21	
5	1	5	7	
7	1	1	7	
	1	1	1	

M1 A1
M1
A1

05

