

1. Write the numeral for two hundred and thirty thousand, five hundred and sixty-three.

Answer 230 563

2. Write the value of the underlined digit in the numeral below.

95 367

Answer 5 000

3. A common factor of 15 and 18 is 1. What other factor is common to 15 and 18?

Answer 3

480

A015

4. Write ONE of the following symbols in the box below to make the number sentence correct.

> = <

8 693



8 639

5. $9 \overline{)927}$

$$\begin{array}{r} 103 \\ 9 \overline{)927} \\ \underline{9} \\ 027 \\ \underline{027} \\ 000 \end{array}$$

Answer 103

6. $7 - \frac{2}{3} =$

$$\begin{aligned} 7 - \frac{2}{3} &= 6 \frac{3}{3} - \frac{2}{3} \\ &= 6 \frac{1}{3} \end{aligned}$$

Answer $6 \frac{1}{3}$

7. Write 0.40 as a fraction in its lowest terms.

$$0.40 = \frac{40}{100}$$

$$\frac{2 \cancel{40}}{\cancel{100}} = \frac{2}{5}$$

Answer $\frac{2}{5}$

027

8. $3.12 \times 4 =$

$$\begin{array}{r} 3.12 \\ \times 4 \\ \hline 12.48 \end{array}$$

Answer 12.48

A005

9. 15% of 300 =

$$\frac{15}{100} \times \frac{300}{1} = 45$$

Answer 45



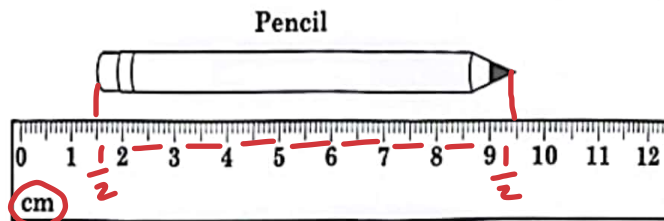
10. An incomplete pattern is shown below.

$-8 -7 -6 -5 -4$
36, 28, 21, 15, 10, 6

What is the missing element in the pattern?

Answer 10

11. What is the length of the pencil shown below?



Answer 8 cm

12. Aidan left home at 6:45 a.m. and arrived at school at 7:25 a.m.

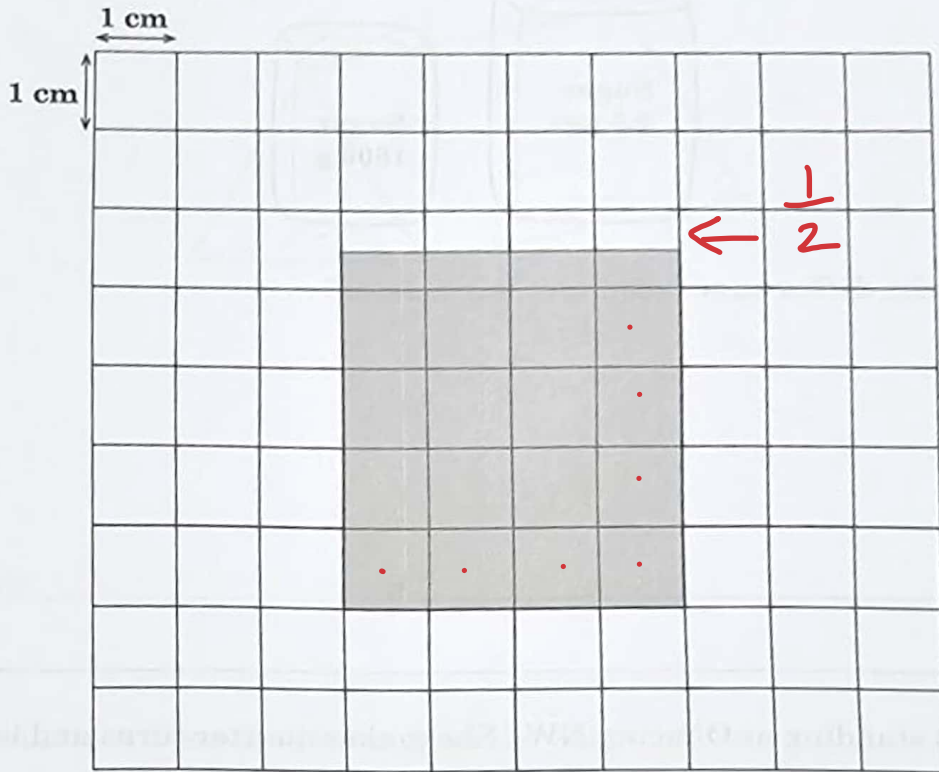
How long was his journey?

$$\begin{array}{r} 15 \\ +25 \\ \hline 40 \end{array}$$

Answer 40 minutes

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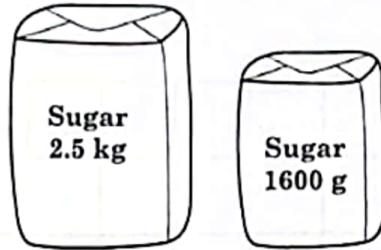
13. A shaded shape is shown on the 1 cm grid below.



What is the area of the shape?

Answer 18 cm²

14. Two packs of sugar are shown below.



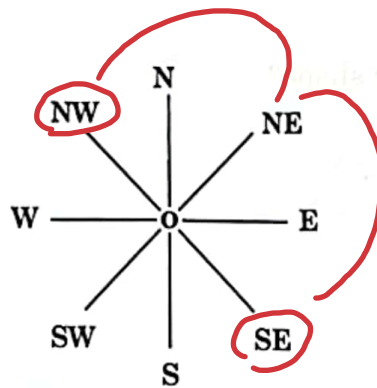
What is the difference between their masses?

$$2.5 \text{ kg} = 2500 \text{ g}$$

$$\begin{array}{r} 2500 \\ - 1600 \\ \hline 0900 \\ \hline \end{array}$$

Answer 900 g

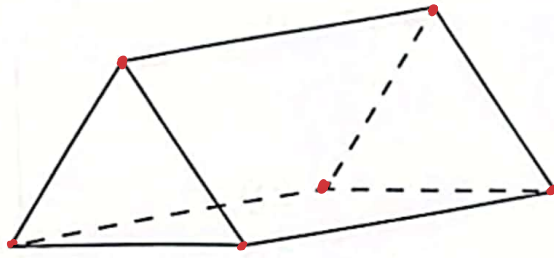
15. Gillian is standing at O facing NW. She makes quarter turns and is now facing SE.



What is the least number of quarter turns made by Gillian?

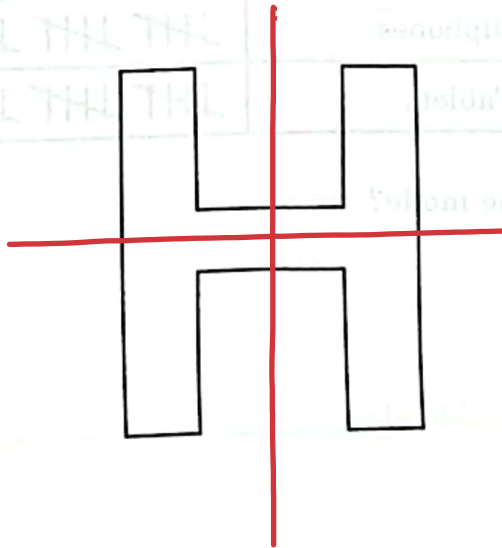
Answer 2 quarter turns

16. How many vertices are there in the solid shown below?



Answer 6 vertices

17. Draw ALL the lines of symmetry on the shape below.



18. The mean of three numbers is 12. Two of the numbers are 10 and 11. What is the third number?

$$\begin{aligned} \text{Total} &= 12 \times 3 = 36 \\ 36 - (10 + 11) &= 15 \end{aligned}$$

Answer 15

19. The tally chart below shows the types of gifts students received.

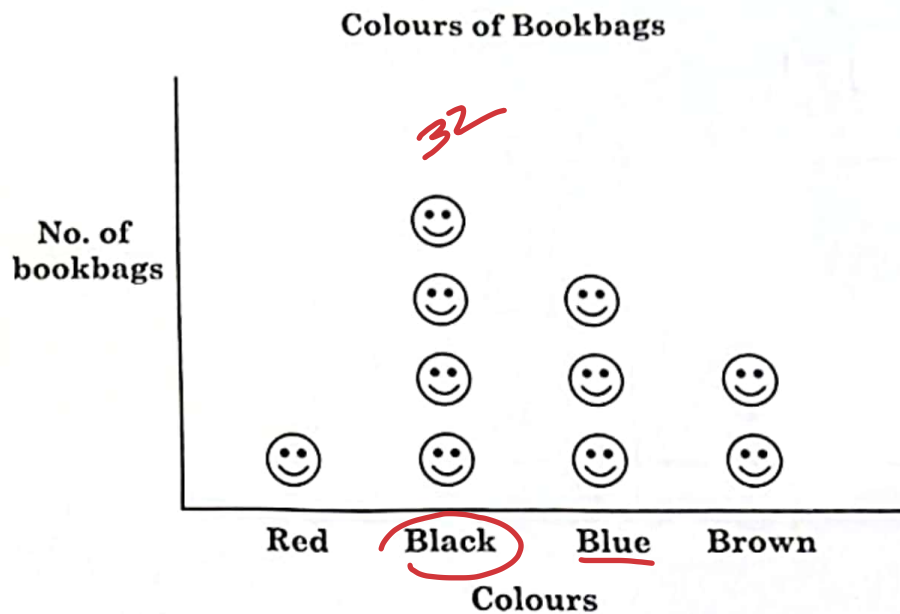
Gifts Students Received

Gift	Tally
Bicycles	
Books	
Cellphones	
Tablets	

Which gift represents the mode?

Answer Cellphones

20. The pictograph below shows the colours of students' bookbags.



If 32 of the bookbags are black, how many are blue?

$$4 \text{ symbols} = 32$$

$$1 \text{ symbol} = 32 \div 4 = 8$$

$$\text{Blue} = 3 \text{ symbols} = 8 \times 3 = 24$$

Answer 24 bookbags

21. $\frac{3}{4} \times 32 = \square^2 - 1$

$$\frac{3}{4} \times \frac{32}{1} = 24$$

$$24 = \square^2 - 1$$

$$\underline{25} - 1 = 24$$

Answer $\square = \underline{5}$

(2 marks)

22. A packet of sweets was shared among 4 students. Each student received 15 sweets and there were 5 sweets remaining.

What was the total number of sweets in the packet?

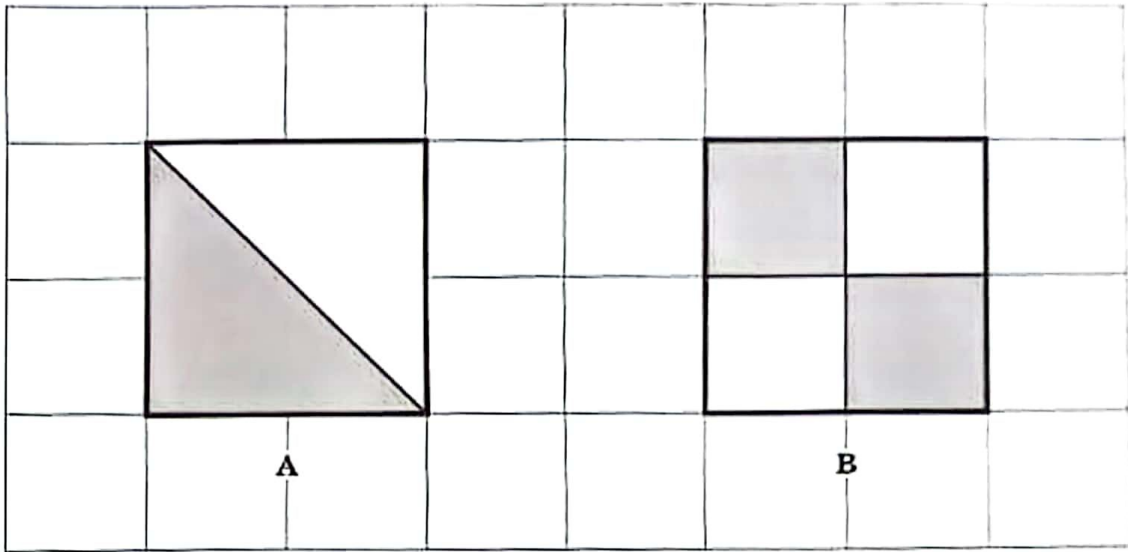
$$15 \times 4 = 60$$

$$60 + 5 = 65$$

Answer $\underline{65}$ sweets

(2 marks)

23. Two fraction models, A and B, are shown on the grid below.



Explain why the fraction models represent equivalent fractions.

Answer Equivalent fractions represent the same portion of the whole. Both models A and B represent half of the shape. Both models occupy a total of 4 squares, with 2 squares shaded. Both models therefore have the same value.

(2 marks)

24. Two fruit stalls sell mangoes at the prices shown below.

Stall A	Stall B
\$9.00 for 6 mangoes	\$5.00 for 4 mangoes

What is the cheaper price of 36 mangoes between Stall A and Stall B?

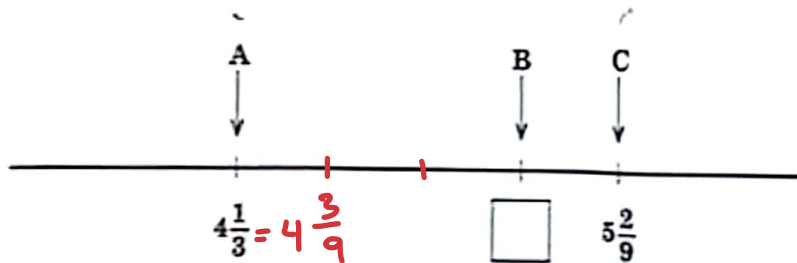
[36 mangoes]

<p>Stall A</p> $36 \div 6 = 6 \text{ sets}$ $6 \times 9 = \$54.00$	<p>Stall B</p> $36 \div 4 = 9 \text{ sets}$ $9 \times 5 = \$45.00$ <p>Stall <u>B</u> is cheaper.</p>
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Answer \$ 45.00

(2 marks)

25. The number line below shows the values of A and C.



The length AC is 4 times the length BC. What is the value of B?

$$\text{Length of } AC = 5\frac{2}{9} - 4\frac{3}{9} = 4\frac{11}{9} - 4\frac{3}{9} = \frac{8}{9}$$

$$\text{Length of } BC = \frac{8}{9} \div 4 = \frac{8}{9} \times \frac{1}{4} = \frac{2}{9}$$

$$B = 5\frac{2}{9} - \frac{2}{9} = 5$$

Answer 5

(3 marks)

26. An arch was made using 280 balloons. For every 4 red balloons, 3 blue and 7 green balloons were used.

How many blue balloons were used to make the arch?

$$\begin{aligned} \text{Total balloons} &= 280 \\ \text{Combination} &= 4 \text{ red} + \underline{3 \text{ blue}} + 7 \text{ green} = 14 \text{ balloons} \\ 280 \div 14 &= 20 \text{ (We can get the comb. 20 times)} \\ 3 \text{ blue} \times 20 &= 60 \end{aligned}$$

Answer 60 blue balloons (3 marks)

27. Kai bought sets of jewelry containing rings and bracelets. Each set cost \$25 and contained 3 more rings than bracelets. Kai spent a total of \$300 and received 24 bracelets.

How many rings were in each set?

$$\begin{aligned} \text{Rings} + \text{Bracelets} &= \$25.00 \\ \square + 3 &\quad \square \end{aligned}$$

$$\begin{aligned} 24 \text{ bracelets} &= \$300 \\ \text{Total sets} &= 300 \div 25 = 12 \\ 12 \text{ sets} &= 24 \text{ bracelets (Each set had 2 bracelets)} \\ \text{Each set therefore had } 2 + 3 \text{ rings} &= 5 \end{aligned}$$

Answer 5 rings (3 marks)

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28. David has \$150.00 to buy pencils and rulers.

Pencils \$1.84 each

\$2.00

Rulers \$8.13 each

\$8.00

Explain how estimation can be used to determine whether or not David has enough money for 15 pencils and 15 rulers.

Pencils can be estimated as \$2.00

Rulers can be estimated as \$8.00

Total of both items = \$10.00

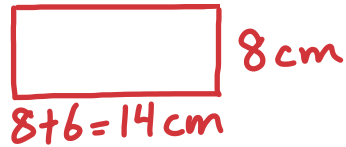
$150 \div 10 = 15$ pencils + 15 rulers

Answer We can round off to the nearest dollar to find the estimated cost of the pencil (\$2.00) and the ruler (\$8.00). This gives a total estimated cost of \$10.00 for both items. David has enough money since 15 pens and rulers will have an estimated cost of $15 \times 10 = \$150$

(3 marks)

29. A piece of wire is bent to form a rectangle of width 8 cm. The length of the rectangle is 6 cm longer than the width.

What is the length of the wire?



Length of wire = Perimeter of rectangle
 $= (14 + 8) \times 2 = 22 \times 2 = 44$

Answer 44 cm (2 marks)

30. Phillip plays football every 3 days and cricket every 4 days. He played football and cricket on 5th February.

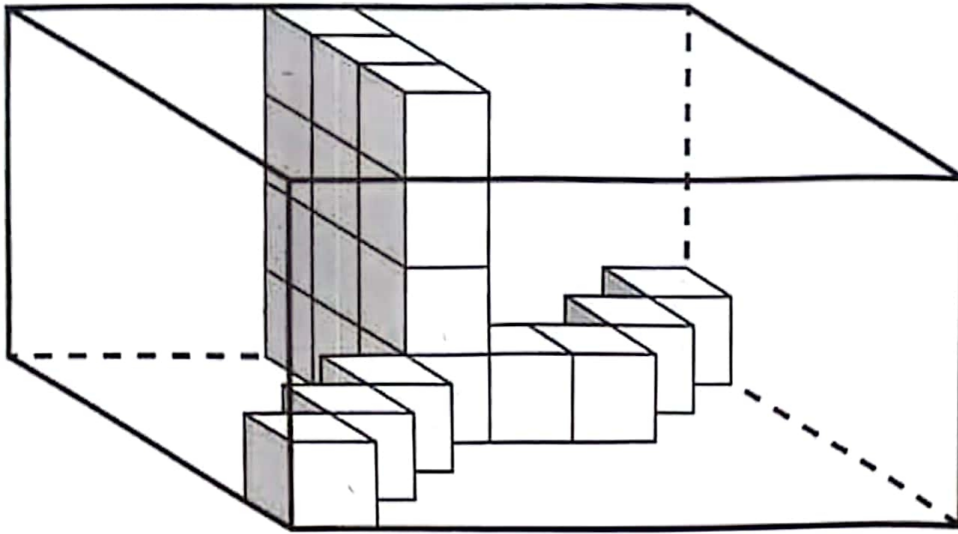
FEBRUARY						
Sun	Mon	Tue	Wed	Thurs	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13				

What will be the next date on which Phillip will play both football and cricket?

Both football and cricket together = L.C.M.
 L.C.M. of 3 and 4 = 12 (12 days later)
 $5 + 12 = 17$

Answer 17th February (2 marks)

31. A box is packed with identical cubes, as shown below.



How many more of these cubes are needed to fill the box completely?

Total cubes / volume = $48 \times 4 = 192$ cubes
1st layer = $6 \times 8 = 48$ cubes

Height = 4 cubes

No. of cubes in box = 19

Difference = $192 - 19 = 173$

$$\begin{array}{r} 8 \\ 192 \\ - 19 \\ \hline 173 \end{array}$$

Answer _____ 173 _____ cubes

(3 marks)

32. Mervyn started to tile a room at 8:40 a.m. He took 4 minutes to lay each tile. After he laid each set of 30 tiles, he took a 45-minute break. Mervyn laid a total of 90 tiles.

At what time did he finish laying all the tiles?

$$\text{Total time taken} = 90 \times 4 = 360 \text{ mins}$$

$$\text{Total breaks} = 2$$



$$\text{Time taken for breaks} = 45 \times 2 = 90 \text{ mins}$$

$$\text{Total time with breaks} = 360 + 90 = 450 \text{ mins} \\ = 7\frac{1}{2} \text{ hrs}$$

$$8:40 + 7 \text{ hrs} = 3:40$$

$$3:40 + 30 \text{ mins} = 4:10$$

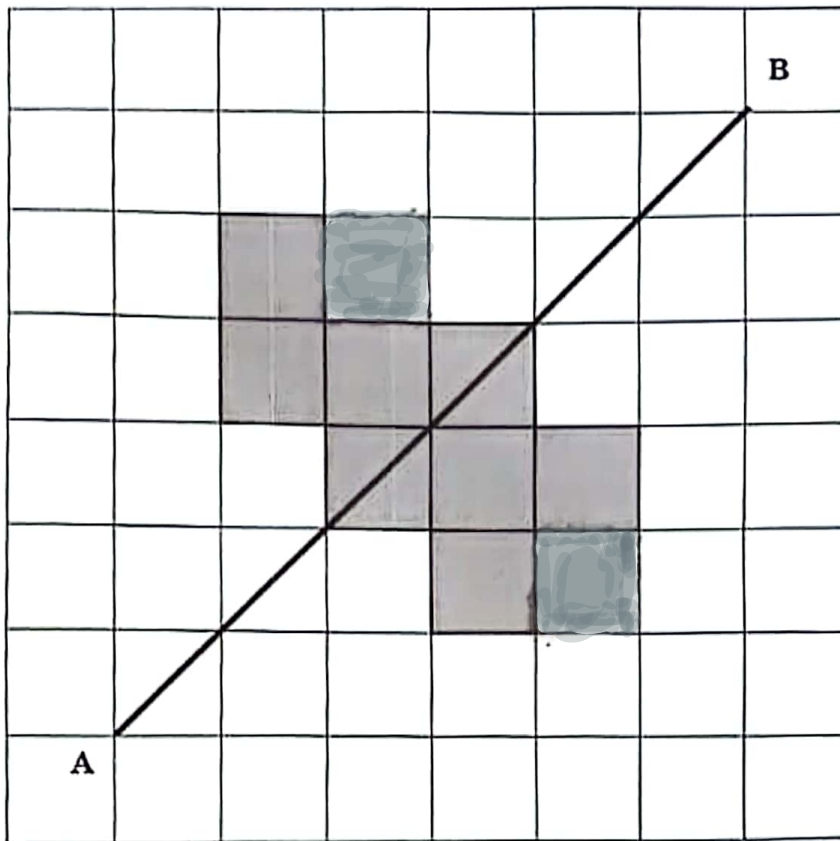
or

$$\begin{array}{r} 8:40 \\ + 7:30 \\ \hline 15:70 \\ - 60 \text{ min} \\ \hline 16:10 \end{array} \quad \begin{array}{r} 16:10 \\ - 12 \\ \hline 4:10 \end{array}$$

Answer 4:10 p.m.

(3 marks)

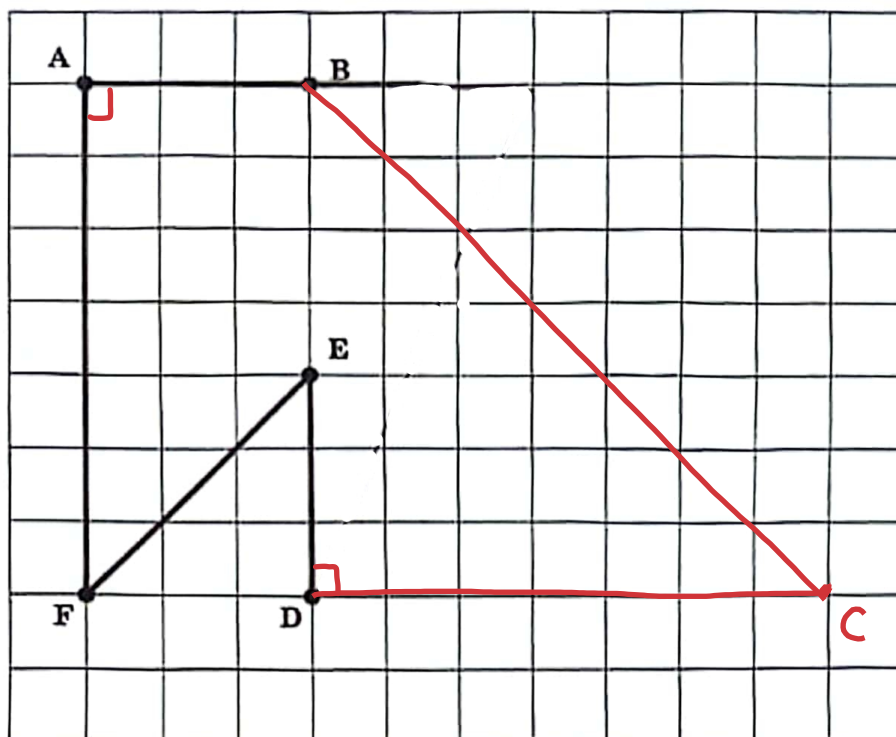
3. In the diagram below, AB is a line of symmetry. Shade 2 squares to complete the symmetrical shape.



Students can turn the paper to see the line of symmetry clearly.

(2 marks)

34. An incomplete hexagon ABCDEF, is shown on the grid below. Insert the point C on the grid such that the hexagon has two right angles, and draw lines to complete the hexagon.



hexagon
= 6 sides

Point C
= 2 lines

(2 marks)

* line
DC can
also be
drawn
shorter.

35. Olivia scored 86, 90 and 70 on three tests. She can earn a Grade A if her mean score is at least 80.

What is the lowest score she can obtain on the fourth test to earn a Grade A?

$$\text{Total score on 4 tests needs to be} = 80 \times 4 = 320$$

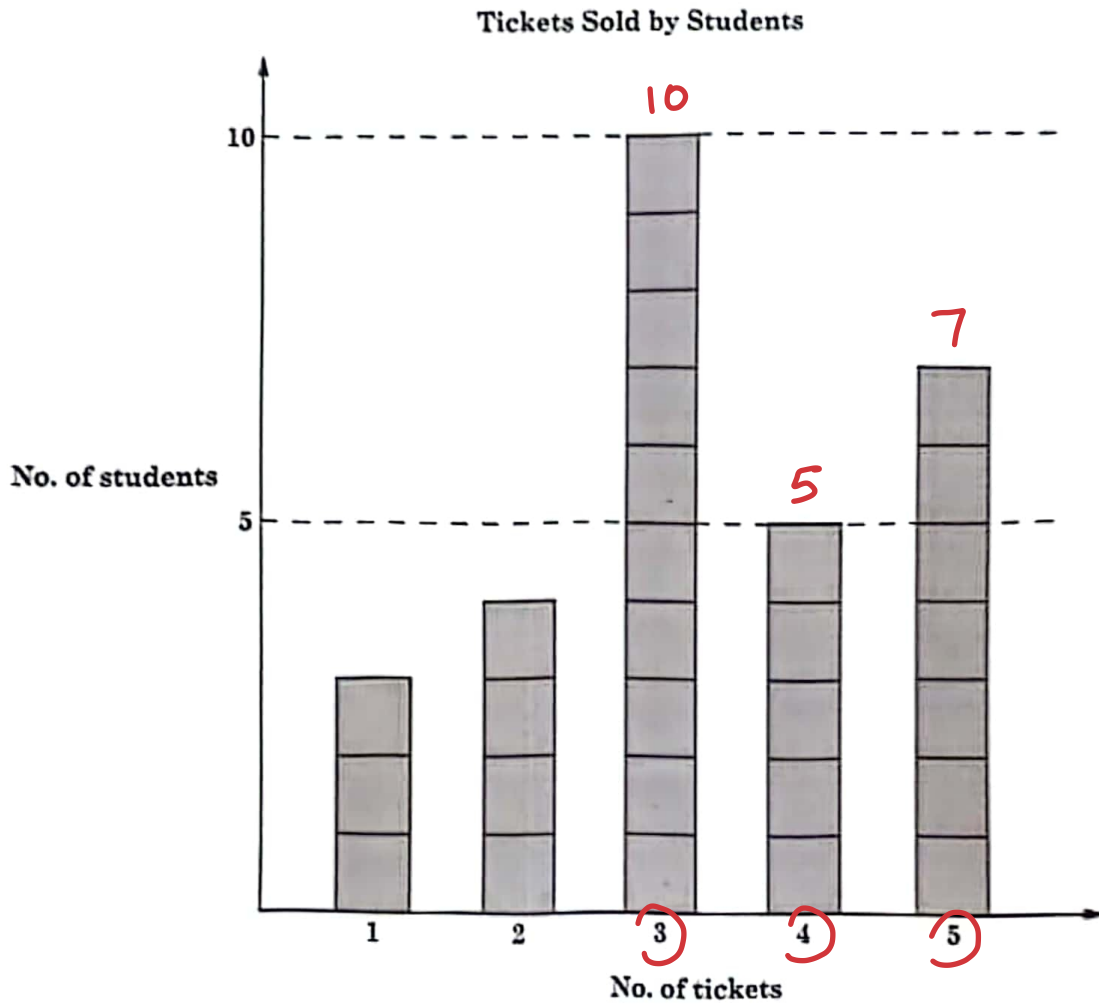
$$\text{Total on 3 tests} = 86 + 90 + 70 = 246$$

$$\text{Difference} = 320 - 246 = 74$$

Answer 74

(2 marks)

36. The block graph below shows the number of tickets sold by students at a school.



How many students sold at least 3 tickets?

At least 3 = 3 or more

$$10 + 5 + 7 = 22$$

Answer 22 students

(3 marks) ?

SECTION 3

37. The cost of 1 bag, 1 book and 1 pen is \$45. Alex bought 1 bag, 1 book and 2 pens and paid a total of \$51. The cost of 1 bag is twice the cost of 1 book.

What is the cost of 1 bag?

$$1 \text{ Bag} + 1 \text{ Book} + \underline{1 \text{ pen}} = \$45$$

$$1 \text{ Bag} + 1 \text{ Book} + \underline{2 \text{ pens}} = \$51$$

$$\text{Difference} = 1 \text{ pen} = 51 - 45 = \$6$$

$$1 \text{ pen} = \$6.00$$

$$\text{Cost of bag} + \text{book} = 45 - 6 = \$39$$

$$\begin{array}{l} \text{Bag} = \overset{13}{\square} \overset{13}{\square} \\ \text{Book} = \square \overset{13}{\square} \end{array} \left. \vphantom{\begin{array}{l} \text{Bag} \\ \text{Book} \end{array}} \right\} \begin{array}{l} \text{Total parts} = 3 \\ \$39 \end{array}$$

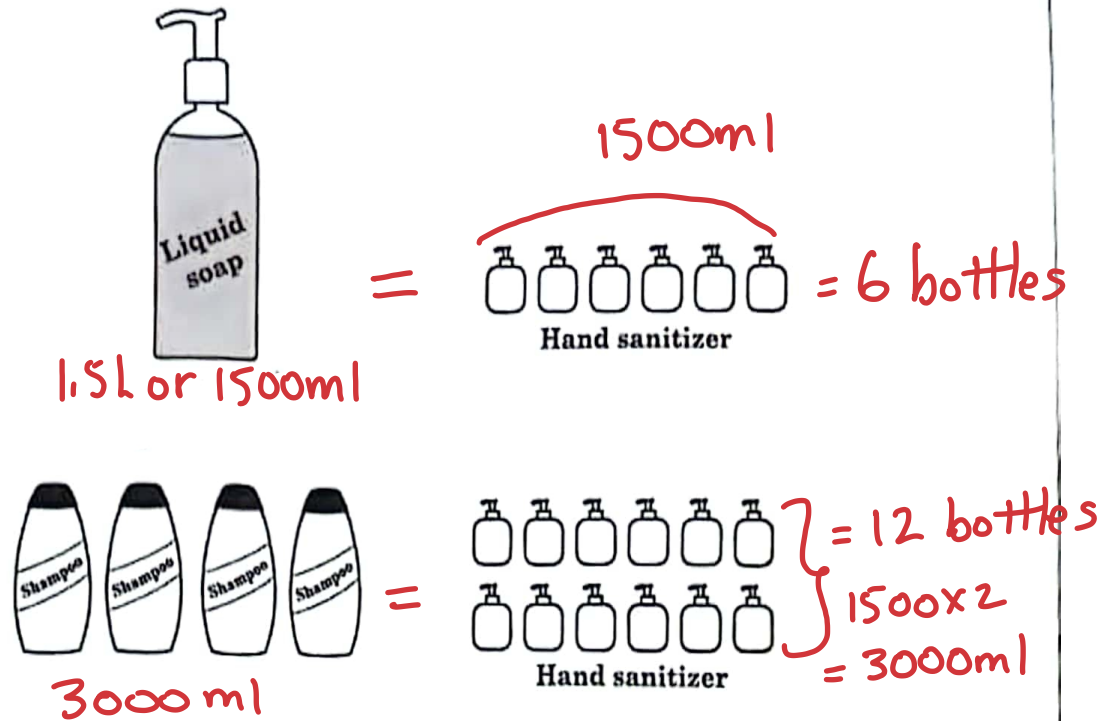
$$39 \div 3 = \$13$$

$$1 \text{ Bag} = 13 \times 2 = \$26$$

Answer \$ 26.00

(4 marks)

38. One bottle of liquid soap has the same capacity as 6 bottles of hand sanitizer. Four bottles of shampoo have the same capacity as 12 bottles of hand sanitizer.



The capacity of 1 bottle of liquid soap is 1.5 litres.

What is the capacity of 1 bottle of shampoo, in millilitres?

$$4 \text{ bottles shampoo} = 3000 \text{ ml}$$

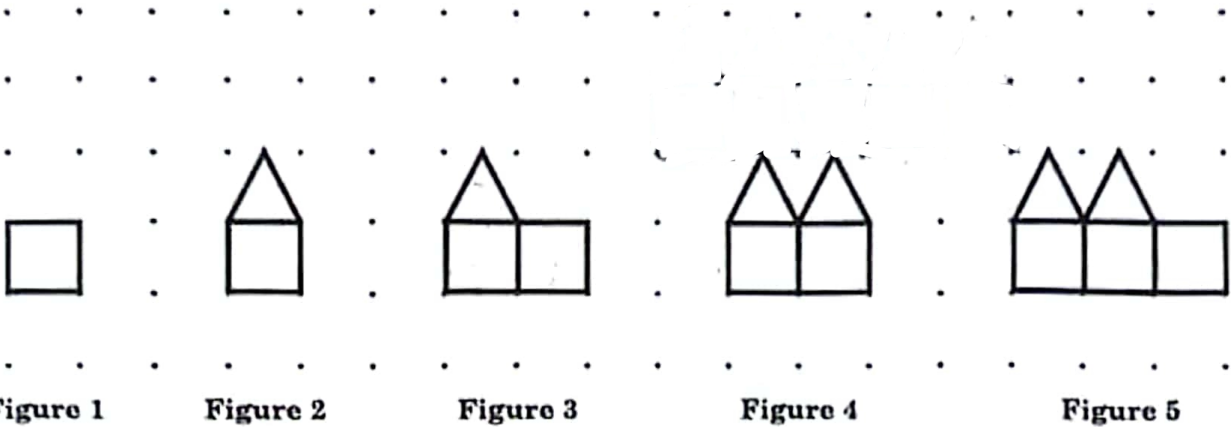
$$1 \text{ bottle shampoo} = 3000 \div 4 = 750$$

$$\begin{array}{r} 750 \\ 4 \overline{) 3000} \\ \underline{28} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

Answer 750 ml

(4 marks)

39. Lollipop sticks are used to form a geometrical pattern, as shown below.



(a) Complete the table below by writing the number of lollipop sticks that will form Figure 4 and Figure 9.

Figure	1	2	3	4	5	6	7	8	9	10
No. of lollipop sticks	4	6	9	11					24	26

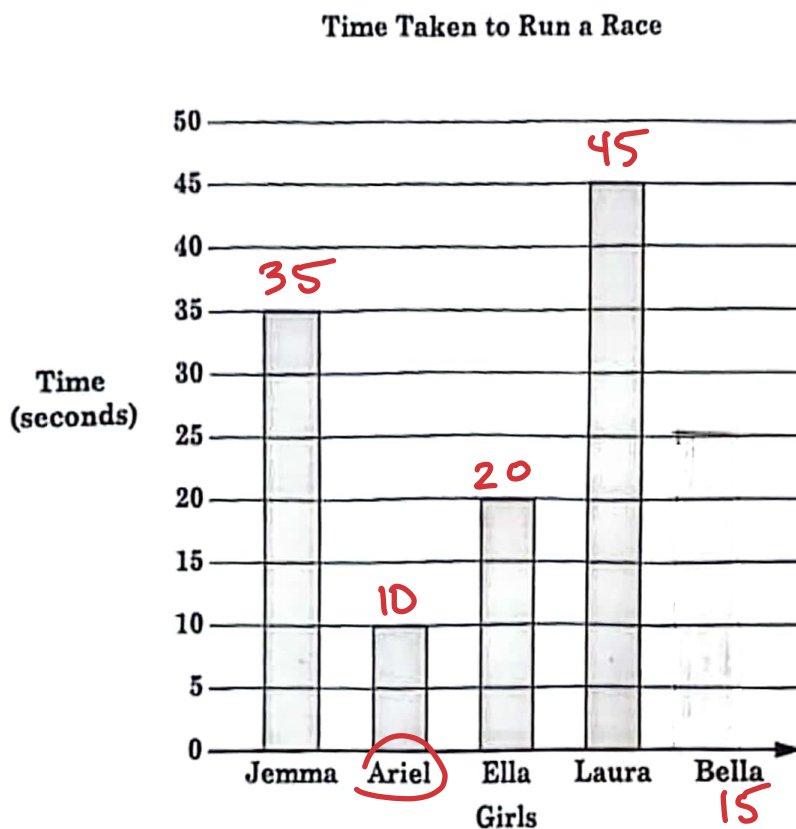
+2 +3 +2 +3 +2 +3 +2 +3 +2

(b) Describe the pattern rule.

Answer The first figure starts with 4 sticks. Then, the pattern rule is to add 2 sticks to the next figure, to form a triangle, then add 3 sticks to the following figure, to form a square.

(4 marks)

40. The incomplete bar graph below shows the time, in seconds, taken by 5 girls to run a race. The average time taken by the 5 girls to run the race was 25 seconds.



- (a) Calculate the time taken by Bella to run the race.

$$\begin{aligned} \text{Total time taken by 5 girls} &= 25 \times 5 = 125 \text{ secs} \\ \text{Total time taken by 4 girls} &= 35 + 10 + 20 + 45 \\ &= 110 \text{ secs} \end{aligned}$$

$$\text{Bella} = 125 - 110 = 15 \text{ secs}$$

Answer 15 seconds

- (b) What was the time taken by the fastest runner?

$$\text{Fastest runner} = \text{least time} = \text{Ariel} = 10 \text{ secs}$$

Answer 10 seconds

(4 marks)