Question 1

Which number is **eight thousand and twelve?**

Circle the correct answer.

A 800 012   B 8 000 012   C 8012   D 812 000

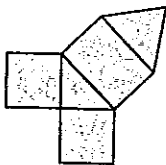### Question 2

Saffron bought 12 oranges for $6.60. What was the average price per orange?

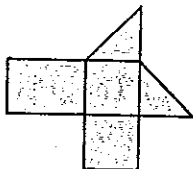Write your answer in the box. $ [   ]

Question 3

Which is the net of a triangular prism?

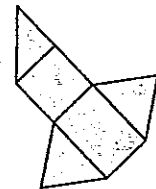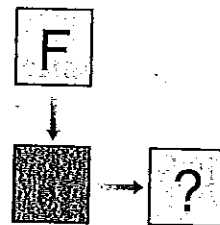A   B   C   D

Question 4

Felicity has a card with her initial printed on it. She flips the card over its bottom edge so that the initial can't be seen and then flips it over its right side so that the initial can be seen again.

How does the card appear now?
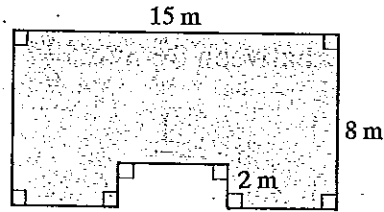

A   B   C   D

Question 5

What is the perimeter of this shape?

15 m

8 m

2 m

A   25 m   B   46 m   C   48 m   D   50 m

Question 6

A piece of pipe needs to be bent to 45°.

Which diagram shows the pipe after it is bent?

A   B   C   D

Question 7

This year Xavier's tax bill was $15 000. Last year it was $12 500.

What percentage increase is this?

A. 45%   B   7.5%   C   17%   D   20%

Question 8

A car uses petrol at the rate of 8 litres per 100 km travelled.

How many litres of petrol will the car use to travel 750 km?

A   45   B   60   C   78   D   94

Question 9

2 kilolitres and 50 litres is the same as

A   200 050 L.   B   250 L.   C   2.5 kL.   D   2.05 kL.

Question 10

What number is halfway between $3\frac{3}{4}$ and $5\frac{1}{4}$?

A $4\frac{1}{4}$ B $4\frac{1}{2}$ C $4\frac{5}{8}$ D $4\frac{3}{4}$

Question 11

Anu wrote out the first five numbers in a pattern: 812, 775, 738, 701, 664.

What is the tenth number in the pattern?

Write your answer in the box.

Question 12

There are 84 apples in a box. The ratio of red apples to green apples is 4 to 3.

How many green apples are in the box?
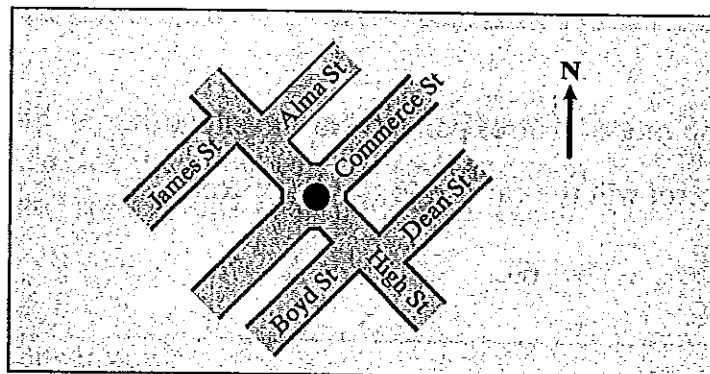
A 21   B 24   C 36   D 48

Question 13

Winona is driving South-East in High Street. She takes the first street on her left after the roundabout.

Into which street does she turn?
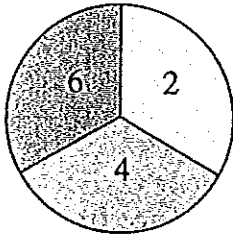

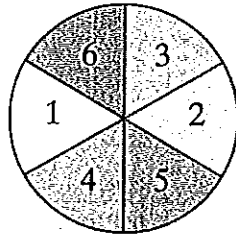A Alma Street   B Boyd Street   C James Street   D Dean Street
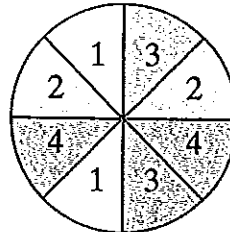
Question 14

Which spinner has a one in four chance of landing on 4?
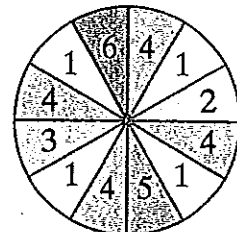

A   B   C   D

Question 15

At the fundraising event, the raffle raised $4500. This was 20% of the total amount raised. How much money was raised at the event?

     A $22 500   B $13 500   C $9000   D $900

Question 16

Which is the best buy?

     A   750 mL for $1.50

     B   2 L for $3.20

     C   3 L for $4.95

     D   5 L for $8.50

Question 17

A cube has sides of length 7 cm. What is the total area of all the surfaces?

Write your answer in the box.

        $\boxed{}$ cm^2

Question 18

Simone arrived at the station at twenty to ten. The next train was due to leave at 10:25. How many minutes did Simone have to wait?

     A   5   B   15   C   45   D   65

Question 19

What is the value of $\dfrac{18 \times 12}{24 \div 3}$?

A   108   B   27   C   9   D   3

Question 20

The scale on a map is 1 cm represents 20 km. Katsuya measured the distance from Airlie to Richford and found it to be 85 mm. What would the actual distance be?
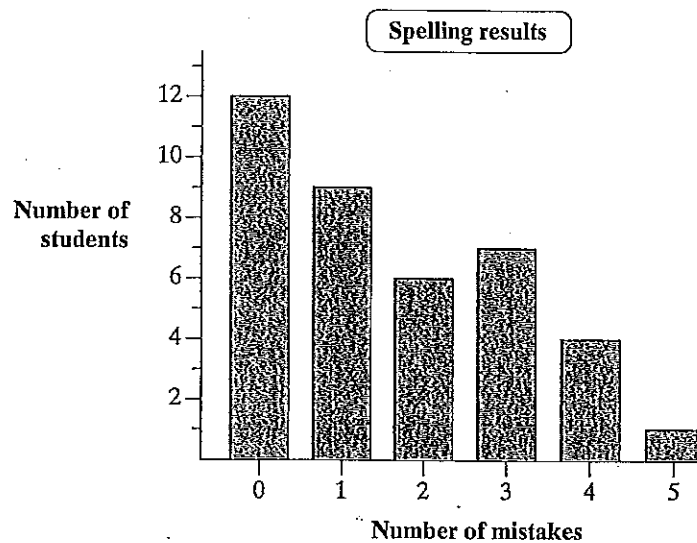
A   1700 m   B   17 km   C   170 km   D   1700 km

Question 21

The graph shows the number of mistakes made by all the contestants in a spelling bee.
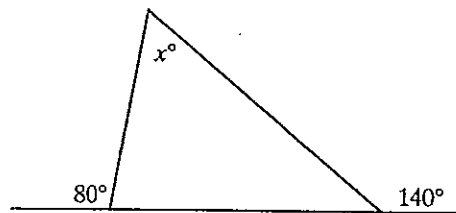

Which statement is **not** correct?

    A   12 contestants made more than 2 mistakes.

    B   Altogether 27 mistakes were made.

    C   There were 39 contestants.

    D   No contestant made more than 5 mistakes.

Question 22

What is the value of x in this diagram?
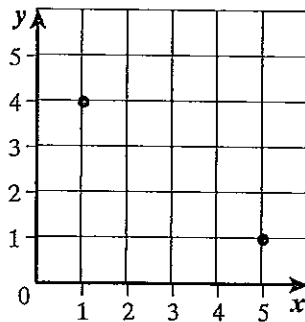
$x°$

80°   140°

| A 40 | B 50 | C 60 | D 70 |

Question 23

The average of 8 numbers is 12. If another number is included, the average increases to 14. What number is included?

| A 14 | B 18 | C 28 | D 30 |

Question 24

Lincoln is drawing a rectangle on a grid. Two of the corners are shown. He places another corner at $(1, 1)$. Where should the fourth corner go?

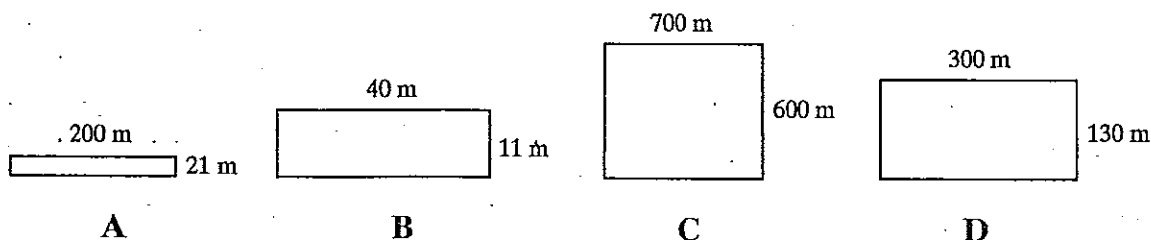| A (4, 5) | B (5, 4) | C (4, 4) | D (5, 5) |

Question 25

The diameter of a 10-cent coin is about 24 mm. Tanvi has $17.50 in 10-cent coins. What is the best estimate for the length of the line, if the coins are lined up in a row?

| A 4.2 m | B 7.3 m | C 42 m | D 73 m |

Question 26

A rectangular paddock of which size would have an area of about 4 hectares?

A — 200 m × 21 m
B — 40 m × 11 m
C — 700 m × 600 m
D — 300 m × 130 m

Question 27

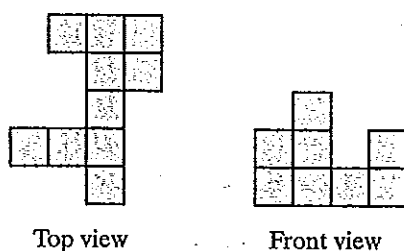On a racetrack, Leanne drove at an average speed of 180 kilometres per hour.

If she drove for five minutes, what distance did she travel?
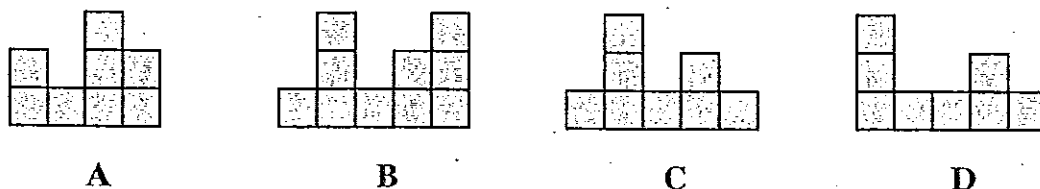
Write your answer in the box. [ ] km

Question 28

Pretty made a 3D object from identical cubes. She drew a top view and a front view of her object.

Top view   Front view

Which **cannot** be a side view?

A   **B**   **C**   **D**

Question 29

Which number is the largest?

A $\dfrac{5}{12}$ B $\dfrac{3}{8}$ C $\dfrac{1}{3}$ D $\dfrac{7}{24}$

Question 30

There are 700 students at a senior college. 60% of the students are boys. 40% of the boys are in Year 12. How many boys are in Year 12 at the college?

Write your answer in the box.

Question 31

The town of Linden lies between Woodville and Hamlet.

Alice saw this sign on the roadside as she drove toward Linden. She knows that the distance from Woodville to Linden is twice that from Linden to Hamlet. How far is Alice from Linden?

	km
Woodville	258
Hamlet	396

Write your answer in the box.   km

Question 32

Iboki began to record the number of nails needed if the fence he was building had different numbers of sections.
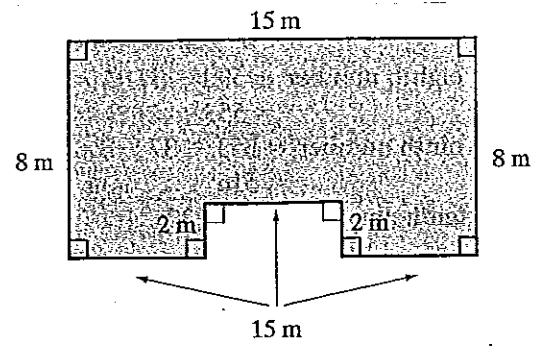
Sections	1	2	3	4	5
Nails	16	28	40	52	64

How many nails will Iboki need if there are 12 sections?
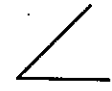
Write your answer in the box.

END OF TEST 4

1 C (Basic level)	**18** C (Basic level)
2 $0.55 (Intermediate level)	**19** B (Basic level)
	20 C (Intermediate level)
3 A (Basic level)	**21** B (Intermediate level)
4 D (Basic level)	**22** A (Advanced level)
5 D (Intermediate level)	**23** D (Intermediate level)
6 C (Intermediate level)	**24** B (Advanced level)
7 D (Intermediate level)	**25** A (Advanced level)
8 B (Intermediate level)	**26** D (Intermediate level)
9 D (Intermediate level)	**27** 15 km (Intermediate level)
10 B (Advanced level)	
11 479 (Intermediate level)	**28** A (Advanced level)
12 C (Intermediate level)	**29** A (Advanced level)
13 D (Basic level)	**30** 168 (Advanced level)
14 C (Basic level)	**31** 350 km (Advanced level)
15 A (Intermediate level)	
16 B (Intermediate level)	**32** 148 (Advanced level)
17 294 cm² (Advanced level)	

1 Eight thousand and twelve = 8000 + 12
$$= 8012$$

2 Average price = $6.60 ÷ 12
$$= \$0.55$$

3 A triangular prism has 2 triangular faces and 3 rectangular faces.
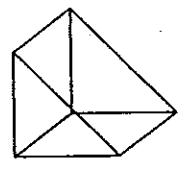
The correct option is A.
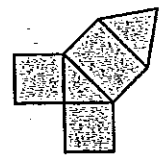
[The net is not Option B because the 2 triangular faces are next to each other, not opposite one another. The net is not C because in C the faces are all in a line and could not fold to form a solid. It is not Option D because that has 3 triangular faces and 2 rectangular faces.]

4 The correct option is D.
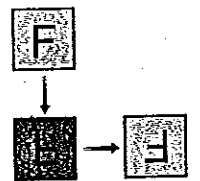
5 The top is 15 metres so the total of the bottom (horizontal) sides is also 15 metres. The left side is 8 metres so the right side is also 8 metres. There is an extra 2 metres on the centre bottom right side so there will be an extra 2 metres on the centre bottom left side as well.

Perimeter = 2 × (15 + 8 + 2) m
$$= 2 \times 25 \text{ m}$$
$$= 50 \text{ m}$$

6 An angle of 90° is a right angle, so an angle of 45° is half the size of a right angle. The correct option is C.

7 Increase = $15 000 − $12 500
$$= \$2500$$
Percentage increase $= \dfrac{\$2500}{\$12500} \times 100\%$
$$= \dfrac{25}{125} \times 100\%$$
$$= 20\%$$

8 750 km = 7.5 × 100 km
Amount of fuel = 7.5 × 8 L
$$= 60 \text{ L}$$

9 1 kilolitre = 1000 litres
2 kL + 50 L = 2000 L + 50 L
$$= 2050 \text{ L}$$
$$= 2.05 \text{ kL}$$

10 Halfway between $3\frac{3}{4}$ and $5\frac{1}{4}$ is halfway between 4 and 5 (after adding $\frac{1}{4}$ to $3\frac{3}{4}$ and subtracting $\frac{1}{4}$ from $5\frac{1}{4}$).
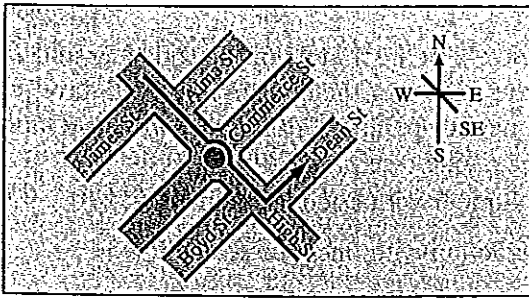Halfway between 4 and 5 is $4\frac{1}{2}$.

11 812, 775, 738, 701, 664
812 − 775 = 37
775 − 738 = 37
The numbers are decreasing by 37 each time.
The sixth number = 664 − 37
$$= 627$$
The seventh number = 627 − 37
$$= 590$$
The eighth number = 590 − 37
$$= 553$$
The ninth number = 553 − 37
$$= 516$$
The tenth number = 516 − 37
$$= 479$$

12 For every 4 red apples in the box, 3 are green. So out of every 7 apples, 3 are green.
Now 84 ÷ 7 = 12
So there are 12 lots of seven apples in the box.
Number of green apples = 12 × 3
$$= 36$$

13 Winona turns into Dean Street.
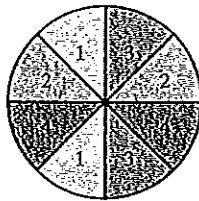

14 Consider each option.
In Option A the chance of landing on 4 is 1 in 3.
In Option B the chance of landing on 4 is 1 in 6.
In Option C the chance of landing on 4 is 2 in 8 or 1 in 4.
In Option D the chance of landing on 4 is 4 in 12 or 1 in 3.
The spinner that has a 1 in 4 chance of landing on 4 is C.

15 $4500 is 20%.
The whole amount is 100%.
Now 20% × 5 = 100%
So the whole amount = 5 × $4500
= $22 500

16 [Find the price for one litre for each option.]
750 mL for $1.50
250 mL for $0.50   (after dividing by 3)
1 L for $2.00   (after multiplying by 4)
2 L for $3.20
1 L for $1.60   (after dividing by 2)
3 L for $4.95
1 L for $1.65   (after dividing by 3)
5 L for $8.50
1 L for $1.70   (after dividing by 5)
The best price per litre is $1.60.
The best buy is 2 L for $3.20.

17 Each face is a square.
Area of each face = 7 cm × 7 cm
= 49 cm^2
The cube has 6 faces.
Total area = 6 × 49 cm^2
= 294 cm^2

18 Simone had to wait 20 minutes until 10 o'clock and another 25 minutes after 10 o'clock.
Total time = (20 + 25) min
= 45 min

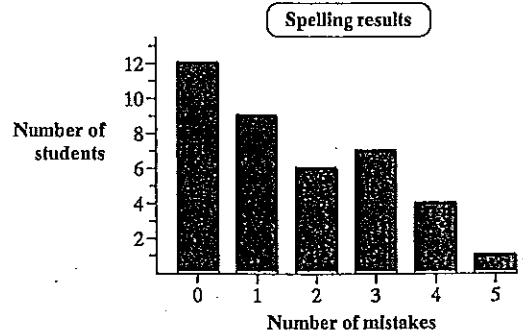**19** $\dfrac{18 \times 12}{24 \div 3}$
$= \dfrac{216}{8}$
= 27

20 85 mm = 8.5 cm
Each centimetre represents 20 km.
So 8.5 cm represents 8.5 × 20 km or 170 km.

21 Consider each option:

'12 contestants made more than 2 mistakes.'
Number of people making more than 2 mistakes
= 7 + 4 + 1
= 12
This statement is correct.

'Altogether 27 mistakes were made.'
9 students made 1 mistake, 6 students made 2 mistakes, 7 made 3 mistakes, 4 made 4 mistakes and 1 student made 5 mistakes.
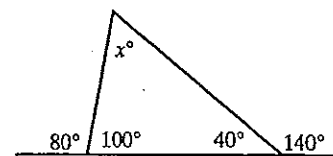Number of mistakes
= 9 + 6 × 2 + 7 × 3 + 4 × 4 + 5
= 9 + 12 + 21 + 16 + 5
= 63
This statement is not correct.
The incorrect statement is 'Altogether 27 mistakes were made.'

22 Angles in a straight line add to 180°.
So one angle in the triangle is 40° and another is 100°.

The angle sum of a triangle is 180°.
x + 100 + 40 = 180
x + 140 = 180
x = 40

23 The average of 8 numbers is 12.
Sum of the numbers = 8 × 12
= 96
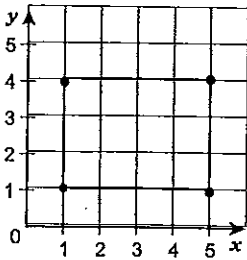The average of 9 numbers is 14.
Sum of those numbers = 9 × 14
= 126
Difference = 126 − 96
= 30
The number that has been included must be 30.

24 A third corner is at $(1, 1)$.
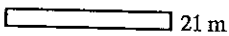

The fourth corner must be at $(5, 4)$.

25 Ten 10-cent coins make \$1.
So, in \$17.50 there will be 175 coins.
Length of the line $= 175 \times 24$ mm
$= 4200$ mm
$= 4.2$ m

26 Find the area of each paddock.
Area $=$ length $\times$ width
Option A:

200 m
21 m

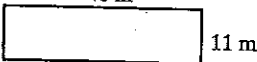Area $= 200$ m $\times$ 21 m
$= 4200$ m^2

Option B:

40 m
11 m

Area $= 40$ m $\times$ 11 m
$= 440$ m^2
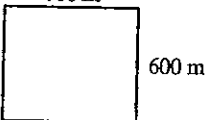
Option C:

700 m
600 m

Area $= 700$ m $\times$ 600 m
$= 420\,000$ m^2
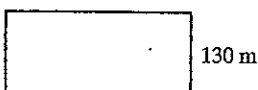
Option D:

300 m
130 m

Area $= 300$ m $\times$ 130 m
$= 39\,000$ m^2
Now 1 hectare is 10 000 m^2.
So 4 hectares is 40 000 m^2.
The paddock that is around 4 hectares is Option D.

27 180 km/h means 180 km in 60 minutes.
This is 18 km in 6 minutes or 3 km per minute.
In 5 minutes, Leanne will travel 5×3 km or 15 km.

28 The top view shows that the object is 5 blocks one way and 4 the other. The front view shows that the shape is 4 blocks across so it must be 5 blocks deep. The view from a side must show 5 blocks across, not 4. A side view cannot be A.
[The other options could be as shown below.]

B   C   D
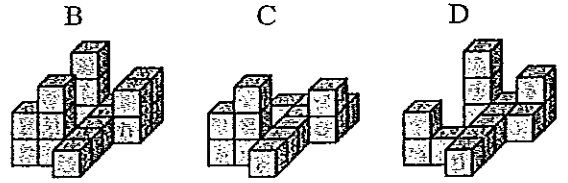
29 [Write all the fractions with the same denominator (24).]

$\dfrac{5}{12} = \dfrac{10}{24}$ (after multiplying numerator and denominator by 2)

$\dfrac{3}{8} = \dfrac{9}{24}$ (after multiplying numerator and denominator by 3)

$\dfrac{1}{3} = \dfrac{8}{24}$ (after multiplying numerator and denominator by 8)

$\dfrac{7}{24}$

The largest number is $\dfrac{10}{24}$ or $\dfrac{5}{12}$.

30 60% of 700 students are boys.
Number of boys $= \dfrac{60}{100} \times 700$
$= 420$
40% of the boys are in Year 12.
Number of boys in Year 12 $= \dfrac{40}{100} \times 420$
$= 168$

31 Distance from Woodville to Hamlet
$= (396 - 258)$ km
$= 138$ km
The distance from Woodville to Linden is twice the distance from Linden to Hamlet. So the distance from Linden to Hamlet is one-third of the distance from Woodville to Hamlet.
Distance from Linden to Hamlet
$= 138$ km $\div$ 3
$= 46$ km
Now Alice is 396 km from Hamlet.
Linden is 46 km closer to Alice.
Distance to Linden $= (396 - 46)$ km
$= 350$ km

32

Sections	1	2	3	4	5
Nails	16	28	40	52	64

Differences: 12   12   12   12
So an extra 12 nails are needed for each extra section.
Now 12 sections is another 7 sections.
Number of nails needed $= 64 + 7 \times 12$
$= 64 + 84$
$= 148$