

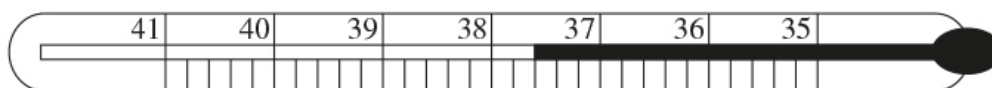
# STUDY SKILLS

## LANTITE: Measurement and geometry

### MEASUREMENT QUESTIONS

#### QUESTION 1

What temperature is showing on this thermometer?



- A. 38.4°
- B. 38.2°
- C. 37.6°
- D. 37.3°

#### QUESTION 2A

A machine in a supermarket is set to cut slices 3.5 mm thick from a piece of ham that is 28 cm long. How many slices can be cut?

- A. 35
- B. 56
- C. 80
- D. 85

#### QUESTION 2B

A machine in a supermarket is set to cut slices 2.5 mm thick from a piece of cheese that is 40 cm long. How many slices can be cut?

- A. 16
- B. 63
- C. 100
- D. 160

#### QUESTION 2C

A machine in a supermarket is set to cut slices of meat 2.5mm thick, from a piece that is 32cm long. How many slices can be cut?

#### QUESTION 3

Sarah weighs 160.6 pounds (73kg). According to this information, how many pounds are equal to 1 kilogram?

#### QUESTION 4A

The Three Kingdoms Period of Korea, when three kingdoms existed in the Korean Peninsula, spanned two eras; Before the Common Era (BCE) and the Common Era (CE). Specifically, the Three Kingdoms Period lasted from 57 BCE until 668 CE (inclusive of both years). Given that the year 1 BCE was followed by the year 1 CE, how many years did the Three Kingdoms Period last for?

**QUESTION 4B**

A particular king ruled from 32 BCE (Before the Common Era) to 17 CE (Common Era), inclusive of both years. Given there exists a year 0 between 1 BCE and 1 CE, how many years did the king rule for?

**QUESTION 4C**

A particular king ruled from 13 BCE (before the common era) to 29 CE (common era), inclusive of both years. Given there exists a year 0 between 1 BCE and 1 CE, how many years did the king rule for?

**QUESTION 4D**

A particular king ruled from 15 BCE (before the common era) to 41 CE (common era), inclusive of both years. Given there exists a year 0 between 1 BCE and 1 CE, how many years did the king rule for?

**QUESTION 4E**

A particular king ruled from 21 BCE (before the common era) to 14 CE (common era), inclusive of both years. Given the year 1 BCE was followed by the year 1 CE, how many years did the king rule for?

**QUESTION 5A**

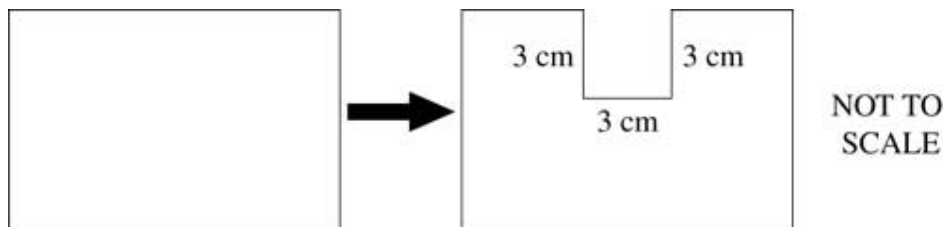
A recipe calls for  $\frac{1}{2}$ kg of plain flour, and 250g of wholemeal flour. How much flour, in grams, is required altogether?

**QUESTION 5B**

A recipe calls for  $\frac{1}{4}$ kg of brown sugar, and 300g of white sugar. How much sugar, in grams, is required altogether?

**GEOMETRY QUESTIONS****QUESTION 6A**

A rectangle with a perimeter of 40 centimetres has a 3 centimetre square removed.

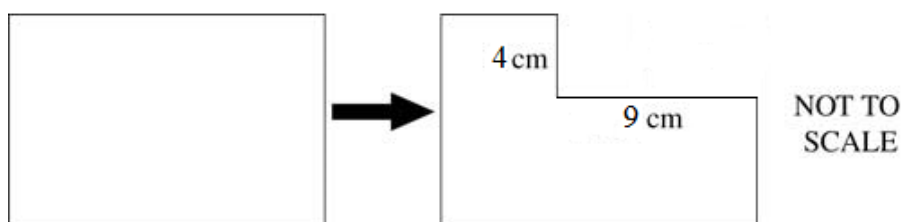


What is the perimeter of the new shape in centimetres?

- A. 31
- B. 34
- C. 46
- D. 49

**QUESTION 6B**

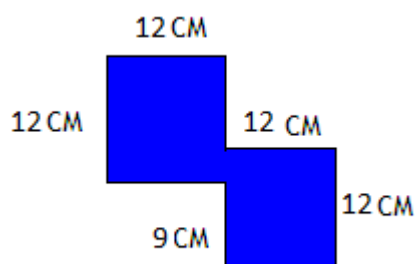
A rectangle with a perimeter of 54 centimetres has a portion removed:



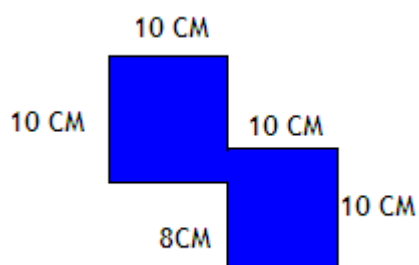
What is the perimeter of the new shape in centimetres?

**QUESTION 7A**

What is the perimeter of this figure?

**QUESTION 7B**

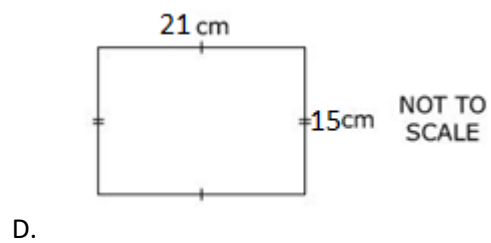
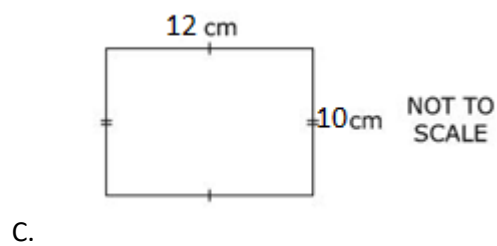
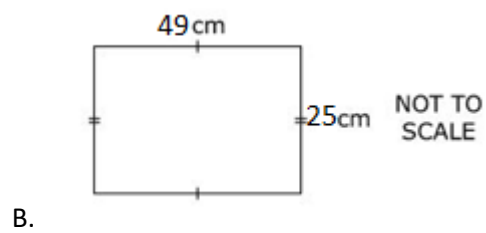
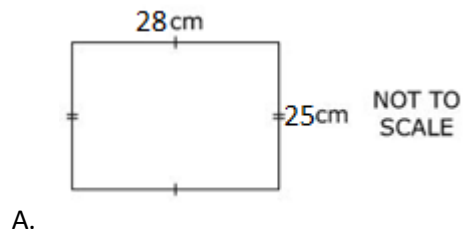
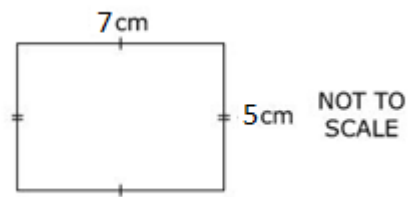
What is the perimeter of this figure?

**QUESTION 8**

A fence is to be erected around a school playing field. The field is rectangular in shape and measures 120m by 90m. What length of fence will be needed?

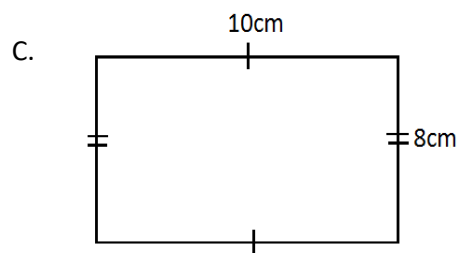
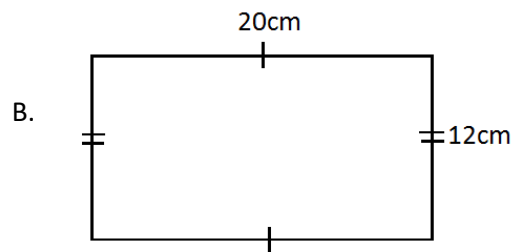
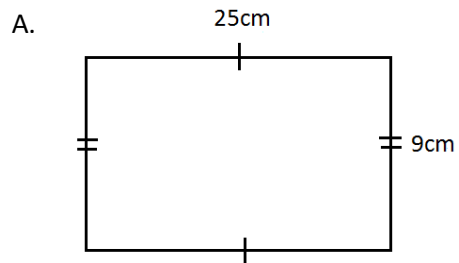
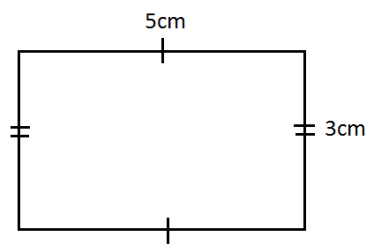
### QUESTION 9A

Which of the rectangles below is similar to this one:



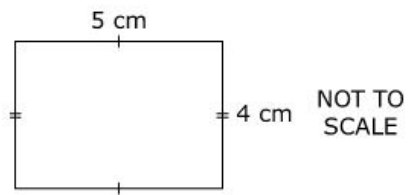
### QUESTION 9B

Which of the three rectangles below is similar to this one:

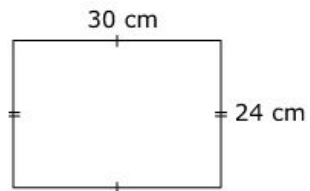


### QUESTION 9C

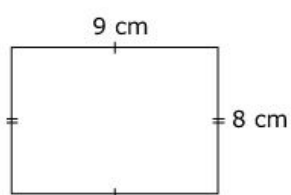
Which of the rectangles below is similar to this one?



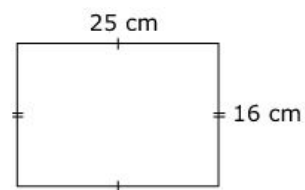
A.



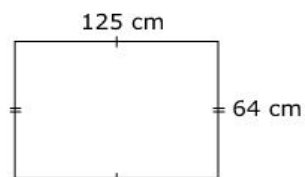
B.



C.

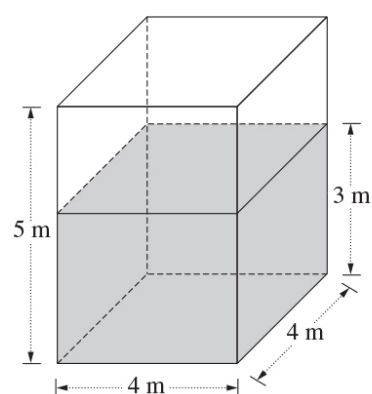


D.



### QUESTION 10A

This large tank contains oil. The shaded area shows how much oil is already in the tank:



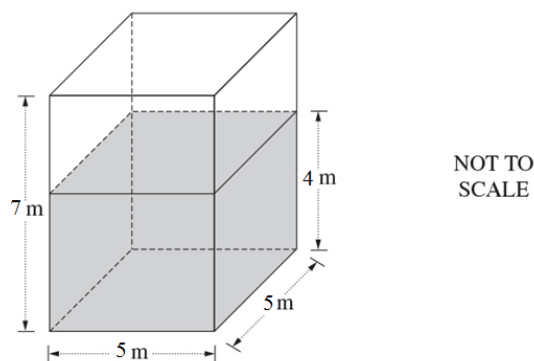
NOT TO SCALE

What volume of the tank is NOT filled with oil?

- A.  $32\text{m}^3$
- B.  $48\text{m}^3$
- C.  $60\text{m}^3$
- D.  $80\text{m}^3$

**QUESTION 10B**

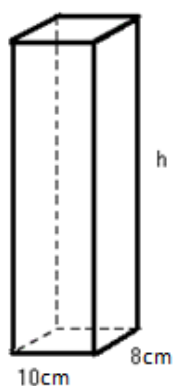
This large tank contains oil. The shaded area shows how much oil is already in the tank:



What volume of the tank is NOT filled with oil?

**QUESTION 11A**

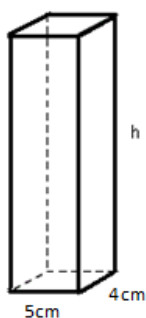
A rectangular prism of volume  $3\,200\text{cm}^3$  has a rectangular base of length 10cm and width 8cm:



What is the height of the prism?

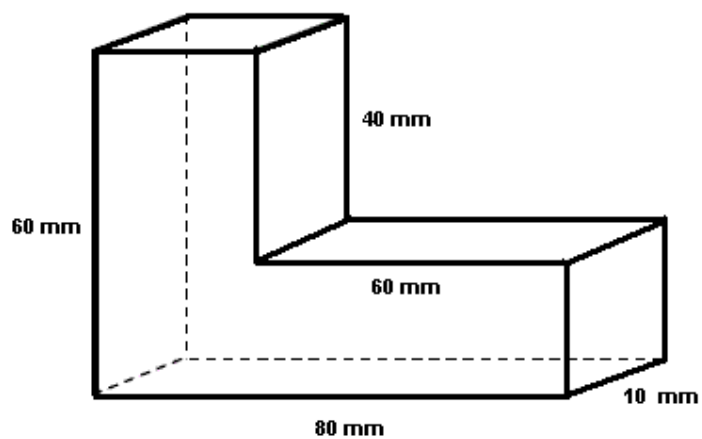
**QUESTION 11B**

A rectangular prism of volume  $360\text{cm}^3$  has a rectangular base of length 5cm and width 4cm. What is the height of the prism?

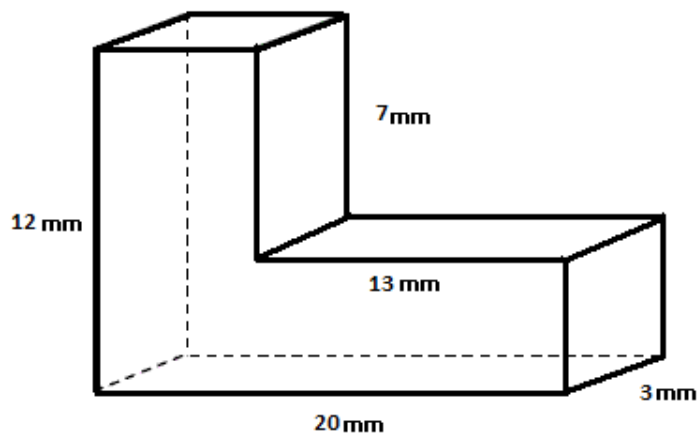


**QUESTION 12A**

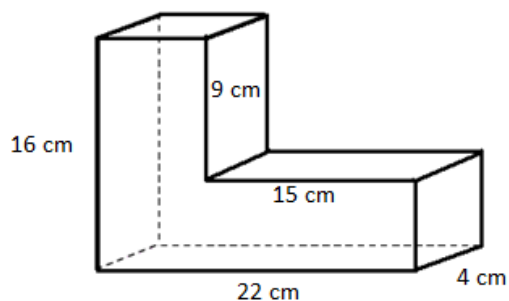
Find the volume of the L-shaped rectangular structure shown below:

**QUESTION 12B**

Find the volume of the L-shaped rectangular structure shown below:

**QUESTION 12C**

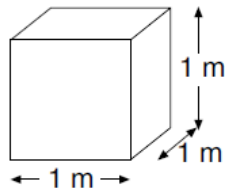
Find the volume of the L-shaped rectangular structure shown below:



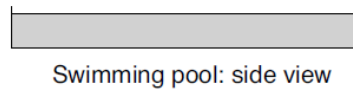
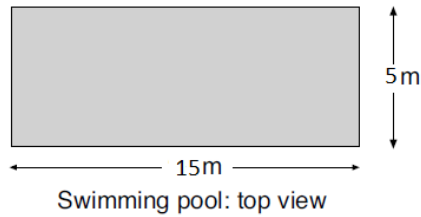


**QUESTION 13**

The cubic container below will hold 1000L (1kL) of water:



The swimming pool shown is filled to a depth of 1.5m:

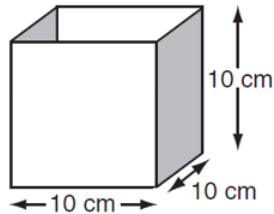


How much water is there in the pool?

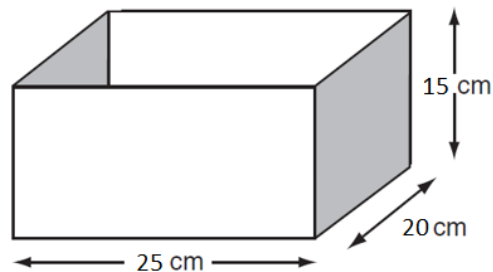
- A. 112.5kL
- B. 75kL
- C. 21.5kL
- D. 22.5kL

**QUESTION 14**

This container holds 1L of liquid:



How much does this container hold?



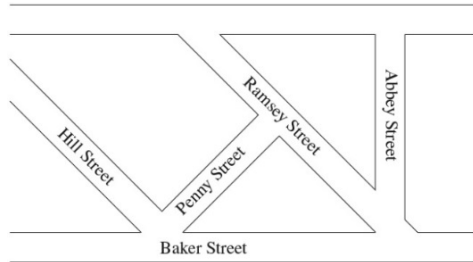
- A. 2.5L
- B. 5L
- C. 7.5L
- D. 10L

**QUESTION 15**

A school playground measures 16m by 12.5m. What is its area in metres squared?

**QUESTION 16**

If a sheet of paper measures 300mm by 200mm, what is the surface area of one side of a sheet in square metres?

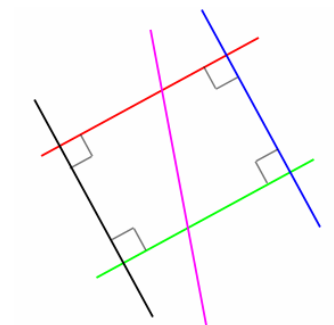
**QUESTION 17**

Which street is perpendicular to Ramsey Street?

- A. Penny Street
- B. Baker Street
- C. Hill Street
- D. Abbey Street

**QUESTION 18A**

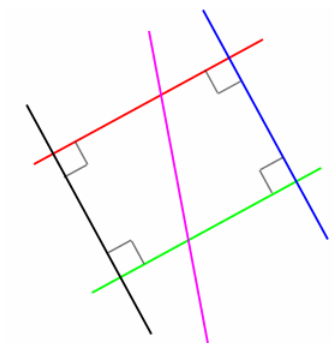
Which pair of lines is perpendicular in the following diagram:



- A. Red and green
- B. Red and pink
- C. Red and black
- D. Blue and black

**QUESTION 18B**

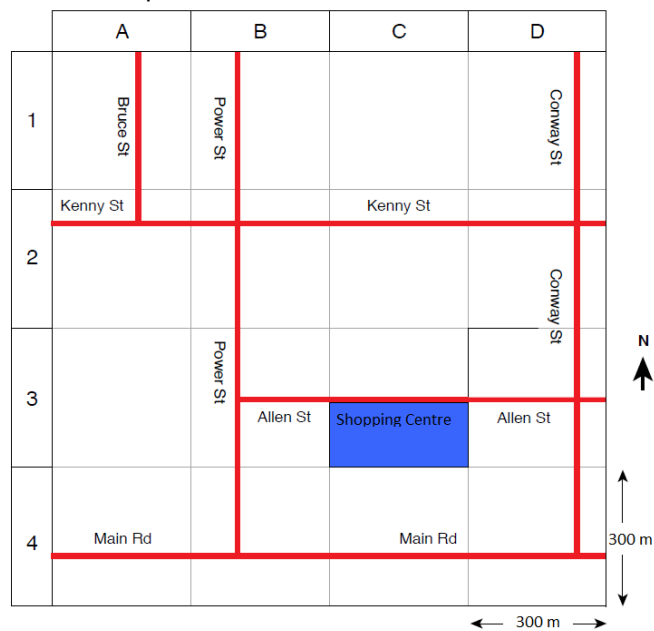
Which of the following pairs of lines are perpendicular in the following diagram:



- A. Pink and green
- B. Blue and black
- C. Green and blue
- D. Red and green

### QUESTION 19

The side-length of each grid square in the map below is 300m:



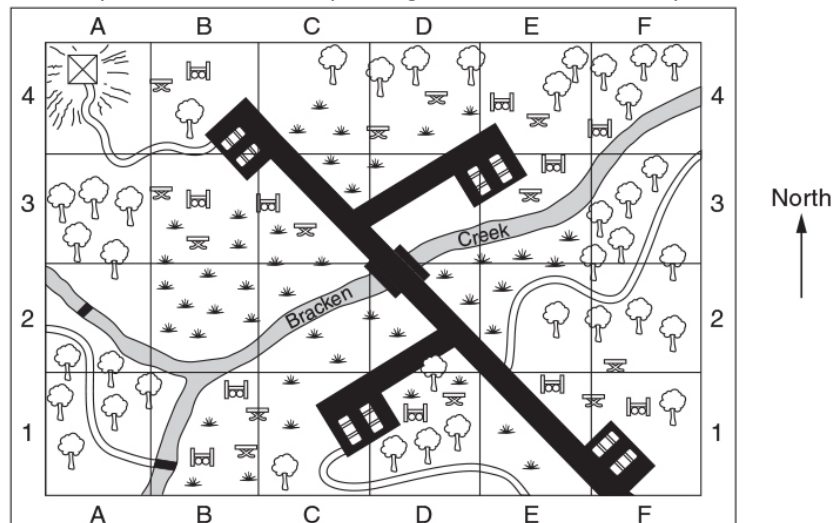
Which of these values is closest to the area of the shopping centre in square metres?

- A. 3 000
- B. 4 500
- C. 9 000
- D. 45 000
- E. 90 000

### MAP AND DIRECTION QUESTIONS

### QUESTION 20

This map of Bracken Creek picnic ground shows four car parks.

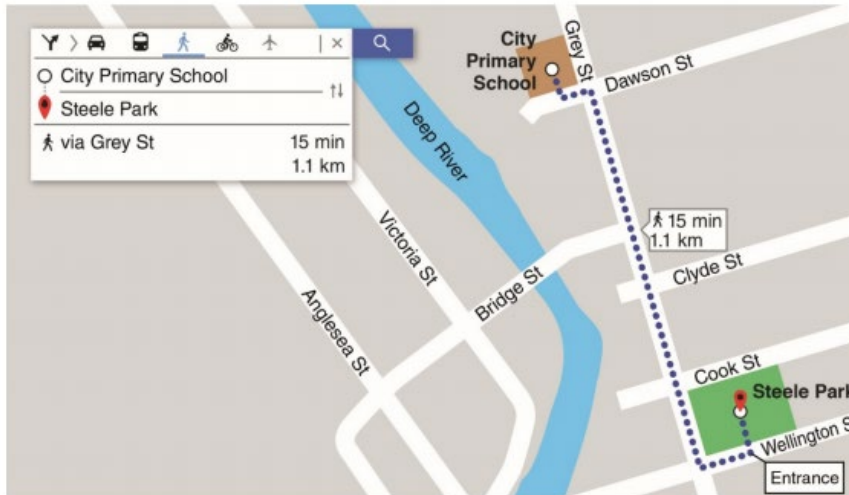


What is the location of the carpark which is south-east of the bridge?

- A. B, 4
- B. C, 1
- C. E, 3
- D. F, 1

### QUESTION 21

An online map shows this route from City Primary School to Steele Park, and related information:

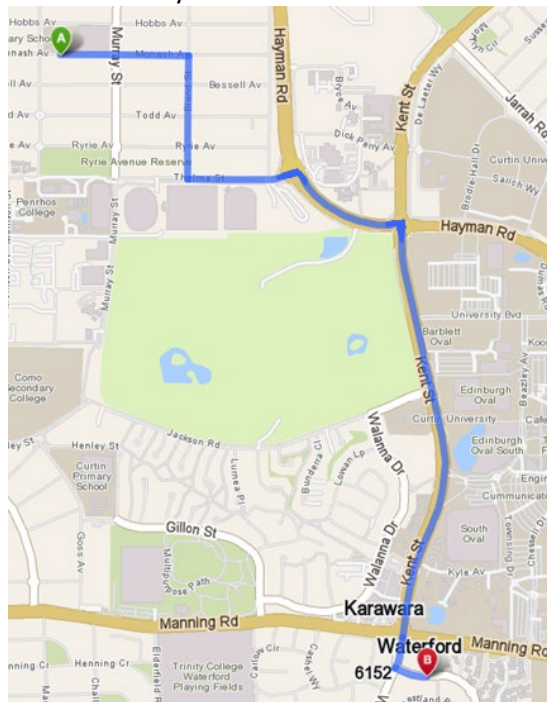


Select true or false for each of the following statements:

- When walking from City Primary School towards Steele Park along Grey Street, Bridge Street is on the left.
- The distance from the corner of Bridge Street and Grey Street to the entrance of Steele Park is less than 200 metres.
- The route from City Primary School to Steele Park requires three left turns and one right turn

### QUESTION 22

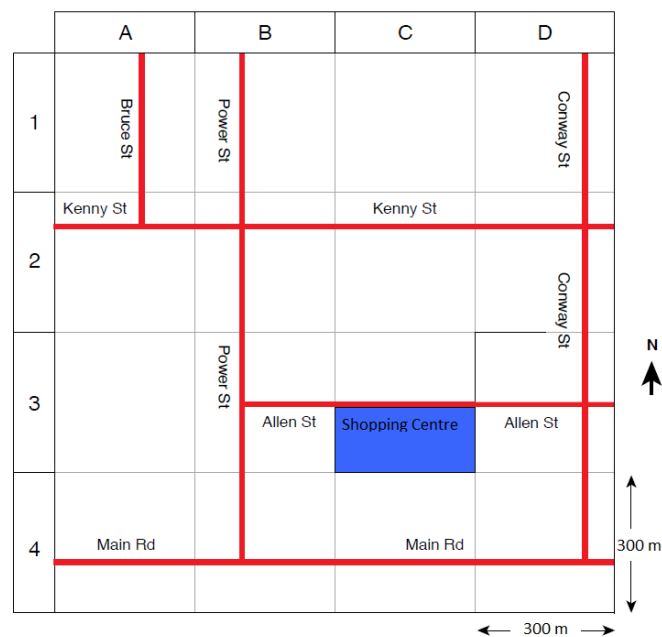
The map below shows the route from Collier Primary School to the Waterford Plaza:



True or false; to get to Waterford plaza from the school you need to take three right turns and two left turns?

### QUESTION 23

Sarah is driving South along Bruce St, as located in the map below:



If she turns left into Kenny St, turns South down Conway St and turns left into Allen St, will she make it to the shopping centre?

### QUESTION 24

A helicopter flying north has turned clockwise through  $225^\circ$ . In what direction is the helicopter now heading?

- A. NE
- B. NW
- C. SE
- D. SW

### RATIO AND PROPORTION QUESTIONS

#### QUESTION 25

If a particular type of milk has 118mg of calcium per 100mL, then how much calcium, in grams, would be in 2L?

#### QUESTION 26

A beach volleyball court measures 8m x 16m. If new rope is required to be purchased for the boundary line, at a cost of \$0.96 per metre, how much would it cost for a new boundary line?

#### QUESTION 27

A bedroom wall is 4m wide and 2.4m high. If it is going to be covered in wall paper at a cost of \$30 per square metre, how much will the wall paper cost?

#### QUESTION 28

How many pieces of card measuring 30cm by 20cm can be cut from a sheet measuring 1.5m by 1.5m?

#### QUESTION 29

A photocopier contains 5 reams of paper stacked on top of each other. If each ream contains 500 sheets and the stack is 27.5cm high, find the thickness of one sheet in millimetres (to two decimal places).

**QUESTION 30A**

Soap powder is sold in four different sizes. Which of the following represents the best buy?

- A. 750g for \$3.40
- B. 1.25kg for \$5.55
- C. 1kg for \$4.30
- D. 1.5kg for \$6.75

**QUESTION 30B**

Tins of milo are sold in four different sizes. Which of the following represents the best buy?

- A. 450g for \$5.50
- B. 750g for \$6.70
- C. 1kg for \$9
- D. 1.5kg for \$13.45

**QUESTION 30C**

Milk is sold in four different sizes. Which of the following represents the best buy?

- A. 600mL for \$1.30
- B. 1L for \$2.10
- C. 2L for \$2.90
- D. 2.5L for \$3.85

**QUESTION 30D**

The same brand of cereal is sold in four different sizes. Which of the following represents the best buy?

- A. 250g for \$3.50
- B. 420g for \$4.99
- C. 730g for \$6.78
- D. 1.15kg for \$11

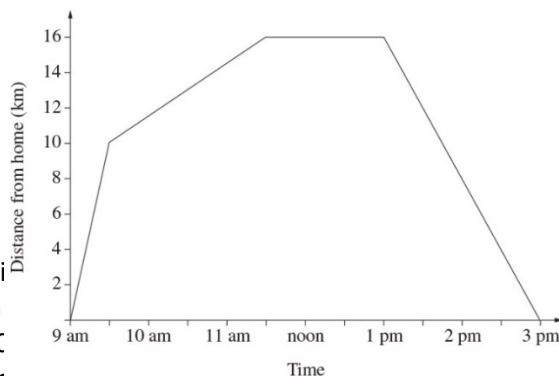
**QUESTION 30E**

Flour is sold in four different sizes. Which of the following represents the best buy?

- A. 300g for \$1.20
- B. 500g for \$1.70
- C. 1kg for \$3
- D. 2kg for \$5

**RATE OF CHANGE QUESTION****QUESTION 31**

The graph shows the distance of a cyclist from home:



The cyclist was travelling

- A. 9 am and 9.30 am
- B. 9.30 am and 11.30
- C. 11.30 am and 1 pm.
- D. 1 pm and 3 pm

## **SOLUTIONS**

1: C  
2A: C  
2B: D  
2C: 128  
3: 2.2kg  
4A: 725 years  
4B: 50 years  
4C: 43 years  
4D: 57 years  
4E: 35 years  
5A: 750g  
5B: 550g  
6A: C  
6B: 54cm  
7A: 90cm  
7B: 76cm  
8: 420m  
9A: D  
9B: B  
9C: A  
10A: A  
10B:  $75\text{m}^3$   
11A: 40cm  
11B: 18cm  
12A:  $24\,000\text{mm}^3$   
12B:  $447\text{mm}^3$   
12C:  $868\text{cm}^3$   
13: A  
14: C  
15:  $200\text{m}^2$   
16:  $0.06\text{m}^2$   
17: A  
18A: C  
18B: C  
19: D  
20: D  
21: a. False, b. False, c. True  
22: True  
23: No  
24: D  
25: 2.36g  
26: \$46.08  
27: \$288  
28: 35 pieces  
29: 0.11mm  
30A: C  
30B: B  
30C: C

30D: C

30E: D

31: A