

## Over-lap Questions June 2019 Paper 1

Answers

- 22/1 There are only blue cubes, red cubes and yellow cubes in a box.  
The table shows the probability of taking at random a blue cube from the box.

<b>Colour</b>	blue	red	yellow
<b>Probability</b>	0.2	0.4	0.4

The number of red cubes in the box is the same as the number of yellow cubes in the box.

- (a) Complete the table.

$$1 - 0.2 = 0.8$$

$$0.8 \div 2 = 0.4$$

(2)

There are 12 blue cubes in the box.

- (b) Work out the total number of cubes in the box.

Probability

$$0.2 = 12 \text{ cubes}$$

$$0.4 = 6 \text{ cubes}$$

$$1.0 = 60 \text{ cubes}$$

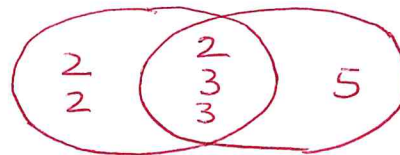
60

(2)

- 24/3 Find the highest common factor (HCF) of 72 and 90

$$\begin{array}{r}
 72 \mid 2 \\
 \hline
 36 \mid 2 \\
 \hline
 18 \mid 2 \\
 \hline
 9 \mid 3 \\
 \hline
 3 \mid 3 \\
 \hline
 1
 \end{array}$$

$$\begin{array}{r}
 90 \mid 2 \\
 \hline
 45 \mid 3 \\
 \hline
 15 \mid 3 \\
 \hline
 5 \mid 5 \\
 \hline
 1
 \end{array}$$



$$72 = 2 \times 2 \times 2 \times 3 \times 3 \quad 90 = 2 \times 3 \times 3 \times 5$$

2 × 3 × 3

(2)

23/2 Deon needs 50 g of sugar to make 15 biscuits.  
 She also needs three times as much flour as sugar  
 two times as much butter as sugar  
 Deon is going to make 60 biscuits.

(a) Work out the amount of flour she needs.

$$\begin{array}{l} \text{Flour} = 3 \times 50\text{g} = 150\text{g} \quad (15 \text{ biscuits}) \\ 150 \times 4 = 600\text{g} \quad (60 \text{ biscuits}) \end{array} \quad \downarrow \times 4$$

$$\begin{array}{r} 600 \\ \hline \end{array} \text{g} \quad (3)$$

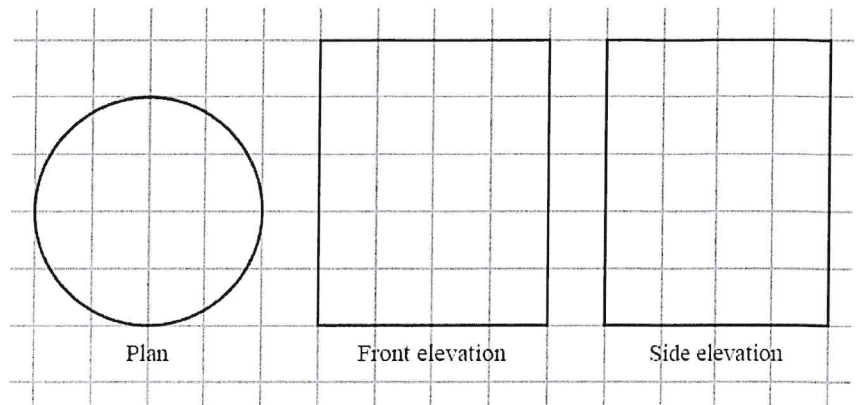
Deon has to buy all the butter she needs to make 60 biscuits.  
 She buys the butter in 250 g packs.

(b) How many packs of butter does Deon need to buy?

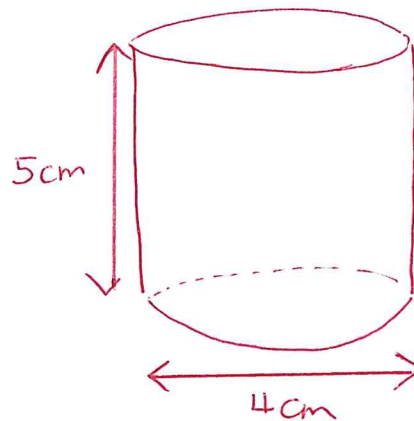
$$\begin{array}{l} \text{Butter} = 50 \times 2 = 100\text{g} \quad (15 \text{ biscuits}) \\ \text{Butter} = 4 \times 100\text{g} = 400\text{g} \quad (60 \text{ biscuits}) \\ \\ 1 \text{ pack} = 250\text{g} \\ 2 \text{ packs} = 500\text{g} \end{array}$$

$$\begin{array}{r} 2 \text{ packs} \\ \hline \end{array} \quad (2)$$

25/4 The diagram shows the plan, front elevation and side elevation of a solid shape, drawn on a centimetre grid.



In the space below, draw a sketch of the solid shape. Give the dimensions of the solid on your sketch.



(2)

26/5

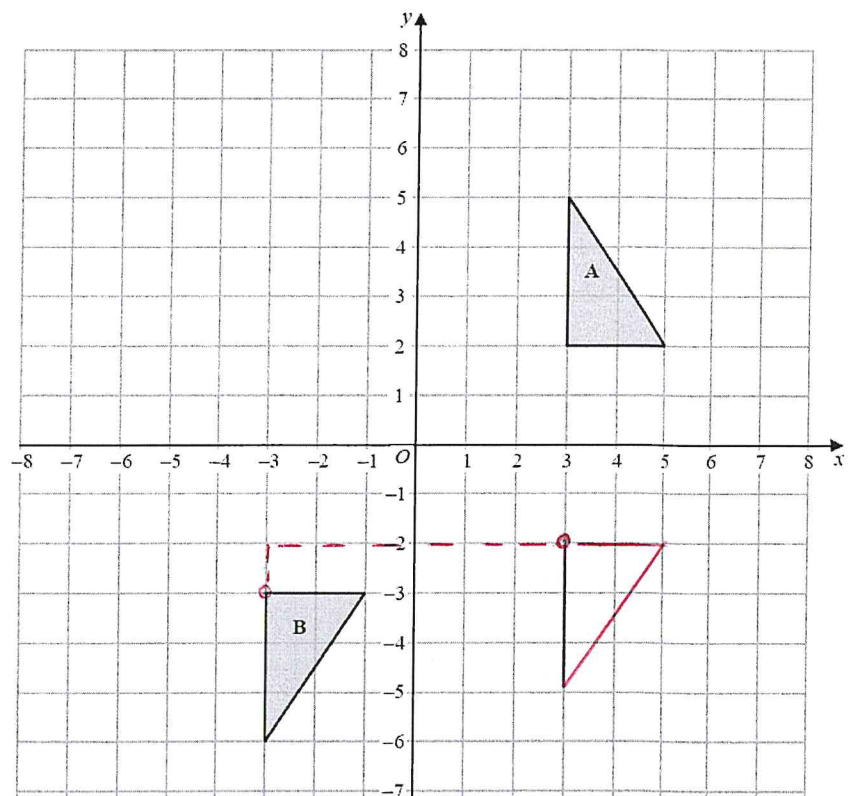
Shape A can be transformed to shape B by a reflection in the  $x$ -axis followed by a translation  $\begin{pmatrix} c \\ d \end{pmatrix}$

Find the value of  $c$  and the value of  $d$ .

$c = \dots -6 \dots$

$d = \dots -1 \dots$

(3)



27/6 A shop sells packs of black pens, packs of red pens and packs of green pens.  
 There are 2 pens in each pack of black pens  
 5 pens in each pack of red pens  
 6 pens in each pack of green pens

On Monday,

number of packs of black pens sold : number of packs of red pens sold : number of packs of green pens sold = 7 : 3 : 4 Packs

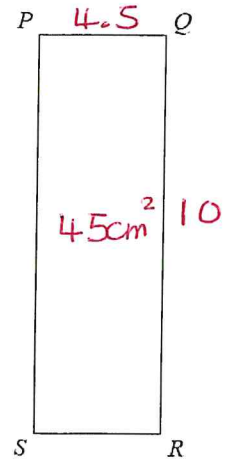
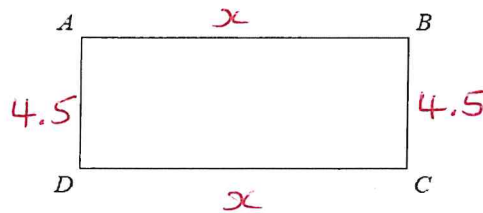
A total of 212 pens were sold.  
 Work out the number of green pens sold.

	Black	Red	Green	
Packs	7	3	4	
	:	:	:	
Pens	14	15	24	Total = 53
				Total = 212 <span style="font-size: 2em; color: red;">}</span> × 4
Packs	7 × 4	3 × 4	4 × 4	
	28	12	16	

..... 16 green packs  
(4)

28/7 Here are two rectangles.

$QR = 10$  cm  
 $BC = PQ$   
 The perimeter of  $ABCD$  is 26 cm  
 The area of  $PQRS$  is  $45$  cm<sup>2</sup>  
 Find the length of  $AB$ .



$$PQ = 45 \div 10 = 4.5 \text{ cm}$$

$$BC = 4.5 \text{ cm}$$

$$\text{Perimeter } ABCD = 26 = 4.5 + 4.5 + x + x$$

$$26 = 9 + 2x$$

$$17 = 2x$$

$$x = \frac{17}{2}$$

$$x = 8.5$$

..... 8.5 ..... cm  
(4)

TOTAL FOR PAPER IS 24 MARKS