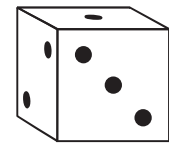
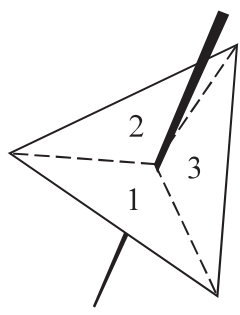


- 7 In a game, a fair 3-sided spinner is spun once and a fair dice is rolled once.



The spinner can land on 1, 2 or 3  
 The dice can land on 1, 2, 3, 4, 5 or 6

In the game, the score is found by multiplying the number the spinner lands on by the number the dice lands on.

- (a) Complete the table to show all possible scores.  
 Eleven of the scores have been done for you.

		Dice					
		1	2	3	4	5	6
Spinner	1	1	2	3	4		
	2		4		8	10	
	3	3	6		12		18

(2)

Steven plays the game once.

- (b) Work out the probability that his score is greater than 10

.....  
 (2)



Adam plays the game and Carmen plays the game.

Adam gets a prize if his score is 5 or less.

Carmen gets a prize if her score is a multiple of 6

Carmen says the game is unfair because Adam is more likely to get a prize.

(c) Is the game unfair?

You must give a reason for your answer.

.....  
.....  
.....  
(2)

**(Total for Question 7 is 6 marks)**

**8** Nina buys 8 pencils and 13 identical rulers.

Each pencil costs \$0.58

The total cost is \$23.62

(a) Work out the cost of each ruler.

.....  
\$ .....  
(3)

Bjorn has \$15 to spend on pens.

Each pen costs \$0.62

He buys as many pens as he can.

(b) Work out how much change Bjorn should get.

.....  
\$ .....  
(3)

**(Total for Question 8 is 6 marks)**



9 Simon has  $x$  sweets.  
Yuen has 2 more sweets than Simon.  
Giulia has 3 times as many sweets as Yuen.  
Simon, Yuen and Giulia have a total of  $T$  sweets.

- (a) Write down a formula for  $T$  in terms of  $x$ .  
Give your formula in its simplest form.

.....  
(3)

- (b) Make  $g$  the subject of the formula  $r = 4g + 7$

.....  
(2)

- (c) Solve  $6y - 3 = 2y + 8$   
Show clear algebraic working.

$y =$ .....  
(3)

(Total for Question 9 is 8 marks)



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DO NOT WRITE IN THIS AREA

10  $ABC$  is an isosceles triangle.

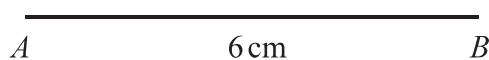
$AB = 6$  cm.

$AC = BC = 7$  cm.

(a) Use ruler and compasses to construct triangle  $ABC$ .

You must show all your construction lines.

The line  $AB$  has been drawn for you.



(2)

(b) Use ruler and compasses to construct the perpendicular bisector of the line  $DE$ .

You must show all your construction lines.



(2)

(Total for Question 10 is 4 marks)



11 Calvin and Jenny are planning a holiday together.

The total cost of the flights is £1190

Calvin and Jenny share the cost of the flights so that

the money that Calvin pays : the money that Jenny pays = 2 : 5

(a) How much more money does Jenny pay than Calvin?

£.....  
(3)

The cost of the villa for their holiday is £3500

They have to pay a deposit of 12% of this cost.

The rest of the cost of the villa is to be paid in monthly instalments of £220

(b) How many monthly instalments must be paid?

.....  
(3)

(Total for Question 11 is 6 marks)

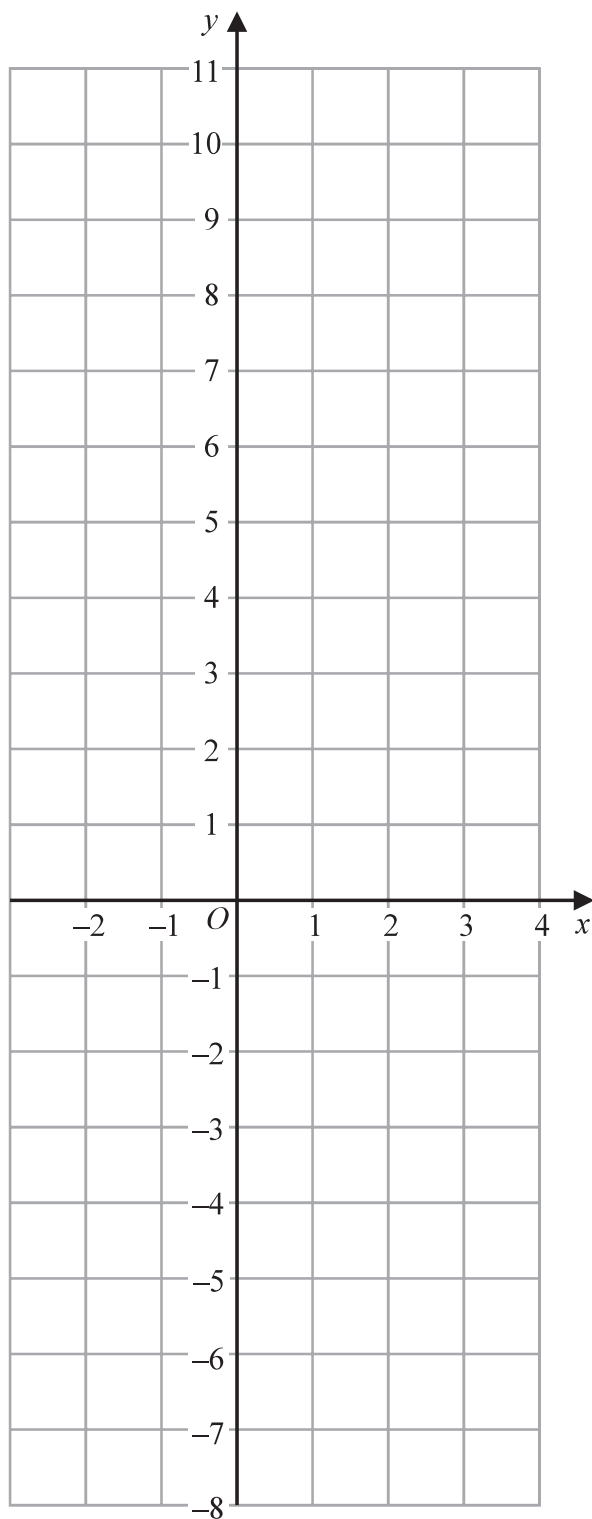


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12 On the grid, draw the graph of  $y = 3x - 1$  for values of  $x$  from  $-2$  to  $3$



(Total for Question 12 is 3 marks)



13 The table shows information about the heights, in cm, of 48 sunflowers in a garden centre.

Height of sunflower ( $h$ cm)	Frequency
$90 < h \leq 100$	8
$100 < h \leq 110$	12
$110 < h \leq 120$	15
$120 < h \leq 130$	10
$130 < h \leq 140$	3

Work out an estimate for the mean height of the sunflowers.

.....cm

(Total for Question 13 is 4 marks)



14  $\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$

$A = \{2, 3, 5, 7\}$

$B = \{4, 6, 8, 10\}$

(a) Explain why  $A \cap B = \emptyset$

.....  
.....  
.....

(1)

$x \in \mathcal{E}$  and  $x \notin A \cup B$

(b) Write down the **two** possible values of  $x$ .

....., .....

(1)

Set  $C$  is such that

$A \cup B \cup C = \mathcal{E}$

$A \cap C = \{2\}$

$B \cap C' = \{4, 6, 10\}$

(c) List all the members of set  $C$ .

.....

(2)

(Total for Question 14 is 4 marks)

