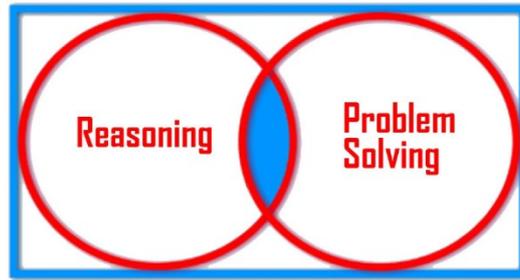# GCSE Foundation (5 – 1)

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Mathematical Reasoning Questions

(Coordinates) – Set 1

The marks shown are for guidance purposes only.
[Total marks: 14 Marks]

1	The coordinates of the point $A = (2a,\ 5b)$ and the point $B = (-4a, 13b)$.
	What is the midpoint of the line segment AB?
	   a) $(a, 9b)$
	   b) $(-a, -9b)$
	   c) $(-a, 9b)$
	   d) $(a, -9b)$
	
	[2Marks]

2	The point $A(6, -5)$ is reflected in the y-axis? What is the image of point A? Choose one answer.
	   a) $(-6, -5)$
	   b) $(6, -5)$
	   c) $(-6, 5)$
	   d) $(6, 5)$
	
	[1Mark]

3	The equation of a straight line is given as $y = ax + c$
	What is the gradient of the line?
	  a) a
	  b) ax
	  c) c
	  d) cx
	
	[1Mark]

4	The equation of a straight line is given as $y = ax + c$
	The coordinate $(0, -6)$ lie on the line. Circle the value of c
	  a) 6
	  b) 0
	  c) -6
	  d) $-a$
	
	[1Mark]

5	The coordinate $A = (2, n)$ lies on the line $y = 7 - 5x$
	Choose the value of n
	  a) 7
	  b) 3
	  c) 13
	  d) -3
	
	[1Mark]

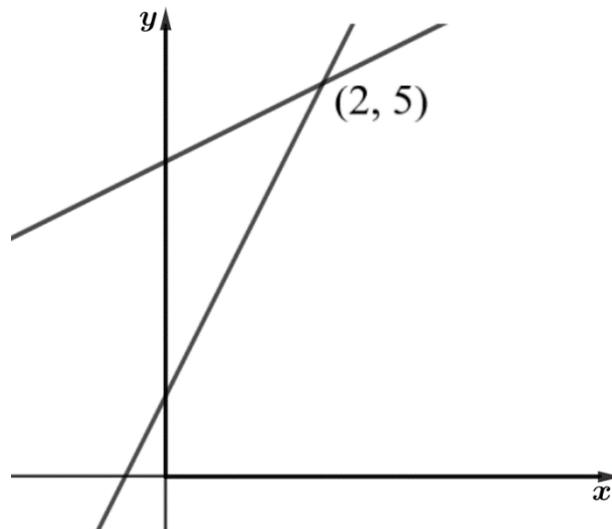|	

6	Which of the following is **True** about the line $y = 3$
	    a) It has a gradient of 3
	    b) It has an x-intercept of 3
	    c) It has a y-intercept of 3
	
	[1Mark]

7	Which of the following is **True** about the line $x = -a$
	    a) It has a y-intercept of $-a$
	    b) It has an x-intercept of $-a$
	    c) It has a gradient of $-a$
	
	[1Mark]

8	The diagram below shows the graphs of $y = \frac{1}{2}x + 4$ and $y = ax + 1$. The lines intersect at the point $(2, 5)$. Calculate the value of a **[2Marks]**

9 Find any two coordinates that lie on the line $y = -2ax + 3a$
Give your coordinates in terms of a.

$(\ldots\ldots, \ldots\ldots)$ and $(\ldots\ldots, \ldots\ldots)$

[2Marks]

10 The equation of a line is given as $2y + x = -5$
Which of the following coordinates will lie on the line?
Choose all that apply.

 a) $(1, -3)$
 b) $(-2, -3.5)$
 c) $(2, -6.5)$
 d) $(-1, 3)$

[2Marks]