

# Topic Test 1 (20 minutes)

## Algebra recap and review - Higher

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1 Circle the line that is parallel to  $y = 2x + 8$

[1 mark]

$$y = \frac{1}{2}x + 8$$

$$y = 8 - 2x$$

$$y - 2x = 0$$

$$y = \frac{8-x}{2}$$

2 Circle the line that is perpendicular to  $y = 2x + 8$

[1 mark]

$$y = \frac{1}{2}x + 8$$

$$y = 8 - 2x$$

$$y - 2x = 0$$

$$y = \frac{8-x}{2}$$

3 Circle the line that passes through the origin.

[1 mark]

$$y = \frac{1}{2}x + 8$$

$$y = 8 - 2x$$

$$y - 2x = 0$$

$$y = \frac{8-x}{2}$$

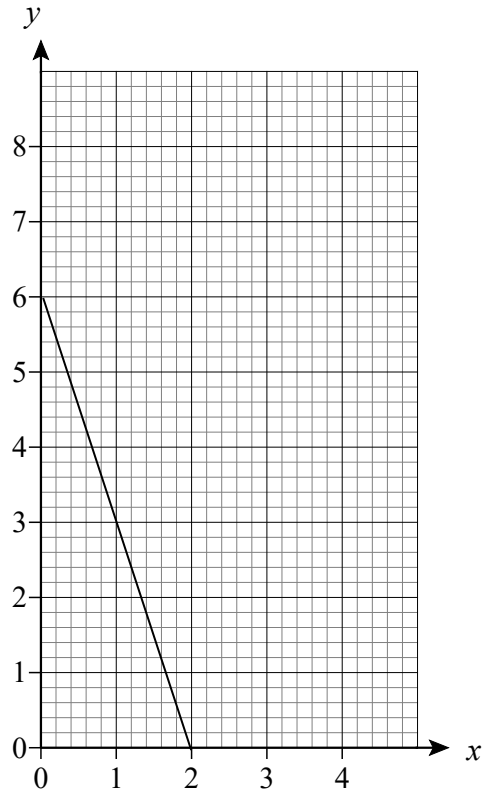
4 Work out where the line  $2y - 3x - 8 = 0$  crosses the  $y$ -axis.

[2 marks]

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Answer ( \_\_\_\_\_ ),( \_\_\_\_\_ )

5 Here is the graph of a straight line.



Work out the equation of the line.

**[3 marks]**

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Answer \_\_\_\_\_

6 Solve the equation  $3x + 14 = 2$

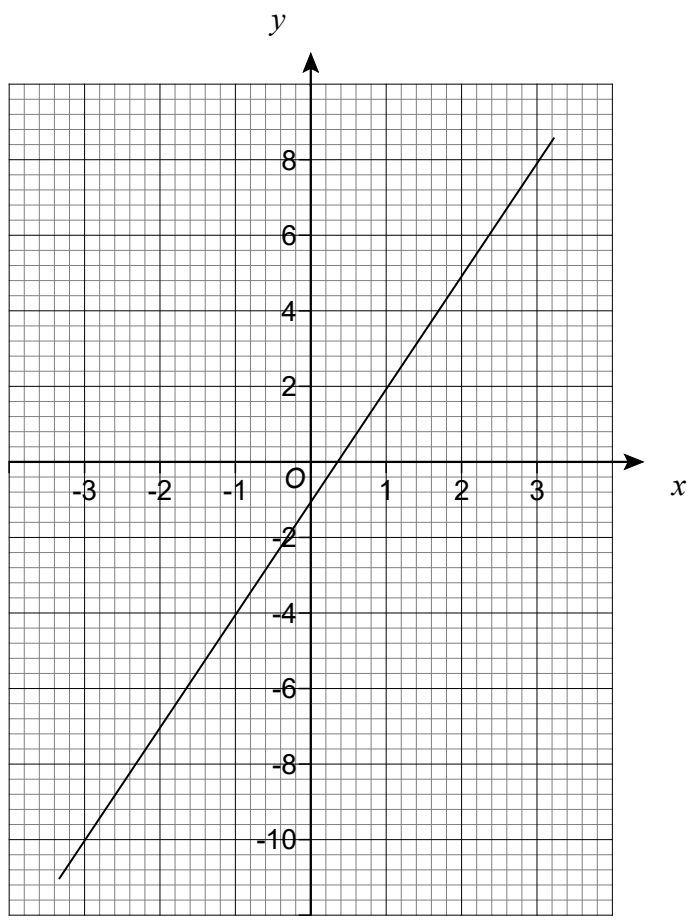
[2 marks]

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$x =$  \_\_\_\_\_

7 Here is the graph of  $y = 3x - 1$



Use the graph to find the solution to  $3x - 1 = 0$

[1 mark]

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Answer \_\_\_\_\_

8 Solve the equation  $5x + 1 = 2(x + 4)$

[3 marks]

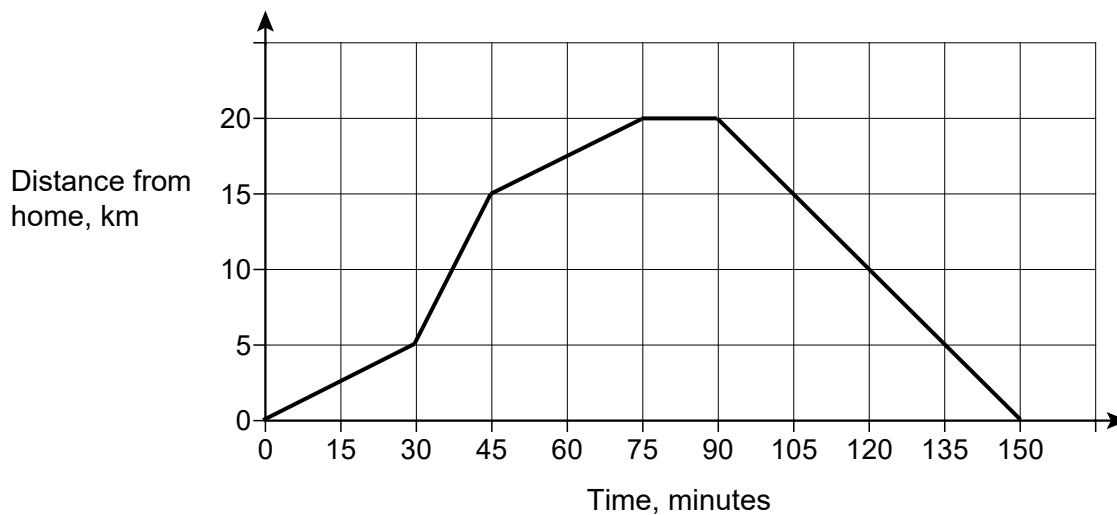
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Answer \_\_\_\_\_

9 Amy cycles from home to a park and back home.  
The graph shows her journey.



Amy stopped at the park for 15 minutes.

Work out her average speed from home to the park in kilometres per hour.

[2 mark]

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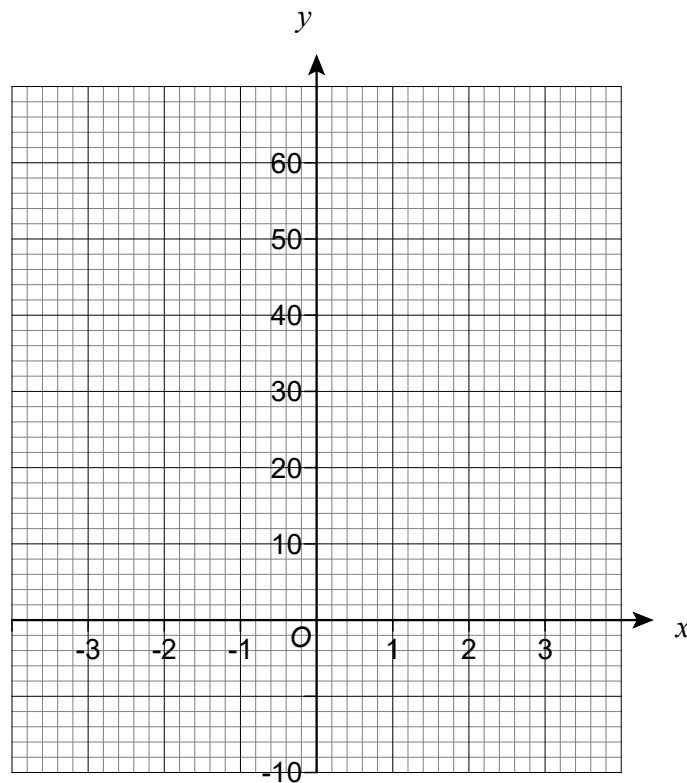
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Answer \_\_\_\_\_ km/h

**10 (a)** Plot the graph of  $y = 8 \times 2^x$  for values of  $x$  from  $-3$  to  $3$ .  
Use this table to help you.

**[3 marks]**

$x$	$-3$	$-2$	$-1$	$0$	$1$	$2$	$3$
$y$	$1$			$8$			$64$



**10 (b)** Explain what happens to the value of  $y$  when  $x$  is a very large negative number.

**[1 mark]**

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