

1.

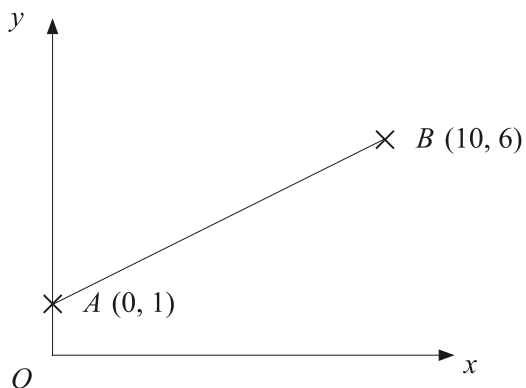


Diagram **NOT** accurately drawn

$A$  is the point  $(0, 1)$   
 $B$  is the point  $(10, 6)$

The equation of the straight line through  $A$  and  $B$  is  $y = \frac{1}{2}x + 1$

(a) Write down the equation of another straight line that is parallel to  $y = \frac{1}{2}x + 1$

..... (1)

(b) Write down the equation of another straight line that passes through the point  $(0, 1)$

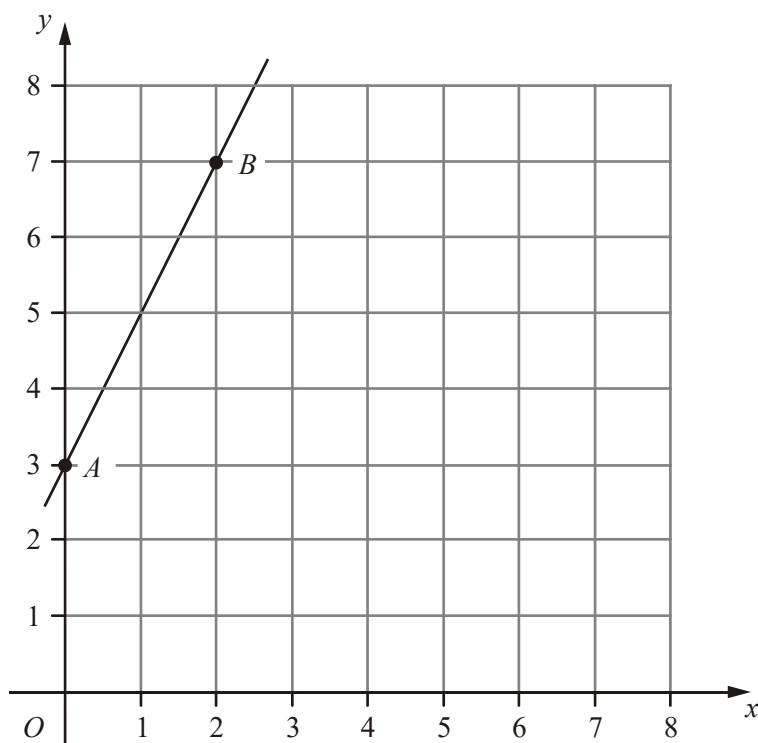
..... (1)

- (c) Find the equation of the line perpendicular to  $AB$  passing through  $B$ .

.....

(3)  
(Total 5 marks)

2.



$A$  has coordinates  $(0, 3)$ .

$B$  has coordinates  $(2, 7)$ .

Work out the gradient of the line that passes through  $A$  and  $B$ .

.....  
(Total 2 marks)

1. (a)  $y = \frac{1}{2}x + k$  1

*Bl for  $y = \frac{1}{2}x + k$ ,  $k \neq 1$*

(b)  $y = mx + 1$  1

*Bl for  $y = mx + 1$ ,  $m \neq \frac{1}{2}$ , or  $x = 0$*

(c)  $y = 2x + 26$  3

*M1 for  $m = -\frac{1}{\left(\frac{1}{2}\right)}$  or  $\frac{1}{2}m = -1$*

*M1 for substituting  $(10, 6)$  into  $y = mx + c$  oe*

*A1 for  $y = -2x + 26$  oe*

**[5]**

2.  $\frac{7-3}{2-0} (= 2)$  2

*M1 for a correct method to work out change in  $y$  and change in  $x$ , e.g.  $7 - 3 (= 4)$  and  $2 - 0 (= 2)$ , values may be marked on diagram*

*A1 for 2, accept 12, 24 oe*

*SC : Bl for  $y = 2x + 3$  with gradient not identified*

**[2]**

1. Parts (a) and (b) were done very well by most of the candidates. In part (c), only the best were able to find the gradient of the perpendicular line and use this with the point (10, 6) to find the equation of the line. A common response was to write the perpendicular gradient as  $-\frac{1}{2}$ ,  $-2$  or  $2$ , and then guess a value for  $c$  (usually 10).
2. Many candidates had little or no idea how to work out the gradient of the line. A common answer was (1, 5), the midpoint of the line segment  $AB$ , and many did not attempt the question. Those with some idea often drew a right-angled triangle on the diagram but even if the change in  $y$  and the change in  $x$  were worked out candidates usually did not know what to do with the two values. Some candidates worked out the equation of the line passing through  $A$  and  $B$  but did not identify the gradient as 2.