

Name:

Exam Style Questions

Perpendicular Lines



Equipment needed: Pencil, pen, ruler & calculator

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

Video 197



Answers and Video Solutions



1. Write down the equation of a line perpendicular to $y = 2x + 3$



.....
(1)

2. Write down the equation of the line that is perpendicular to $y = \frac{1}{2}x + 3$ and passes through $(0, -1)$



.....
(2)

3. A straight line passes through the point $(0, 8)$ and is perpendicular to $y = -4x - 3$. Find the equation of the line.



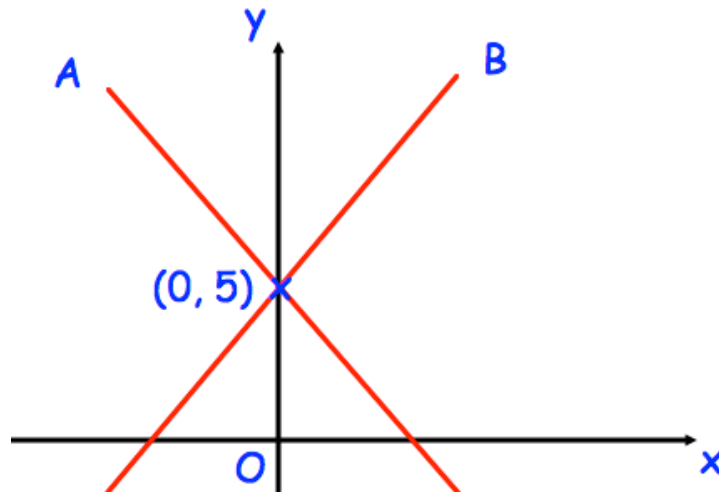
.....
(2)

4. Write down the equation of the line that is perpendicular to $3x - y = 1$ and passes through $(0, 9)$



.....
(2)

5.



The lines A and B are perpendicular.

Both lines pass through the point (0, 5)

The gradient of line A is $-\frac{3}{4}$

Write down the equation of line B

.....
(2)

6. The point A is (5, -2) and the point B is (11, 1).



Find the equation of the line perpendicular to AB passing through the origin.

.....
(3)

7. The equations of five lines are given below.



Line A $y = 4x + 5$

Line B $y = \frac{1}{4}x - 5$

Line C $y = 6 - x$

Line D $y - 4x = 1$

Line E $y + 4x = 6$

(a) Which line goes through the point (20, 0)?

.....
(1)

(b) Which two lines cross the y-axis at the same point?

..... and
(2)

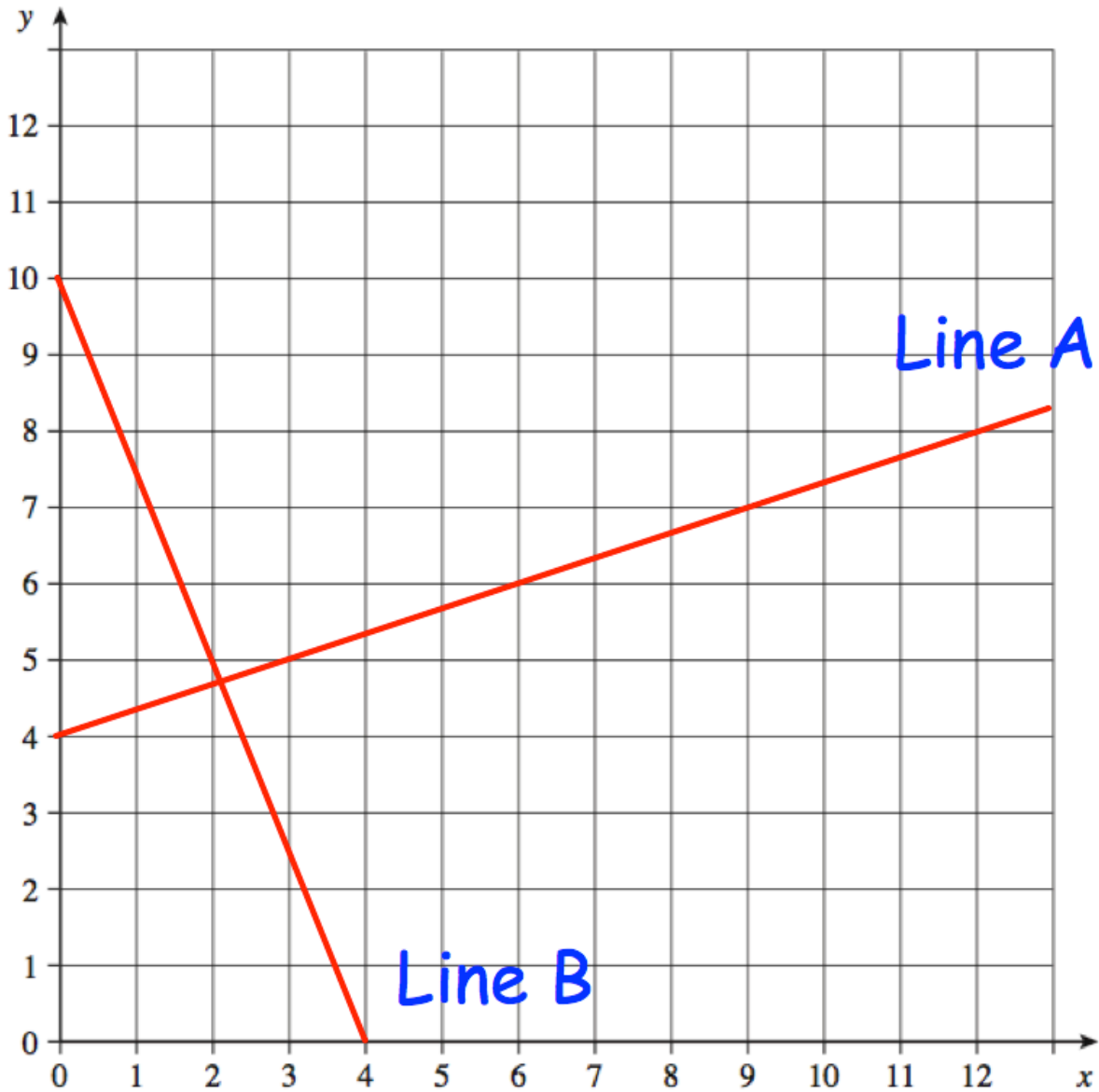
(c) Which two lines are parallel?

..... and
(2)

(d) Which two lines are perpendicular?

..... and
(2)

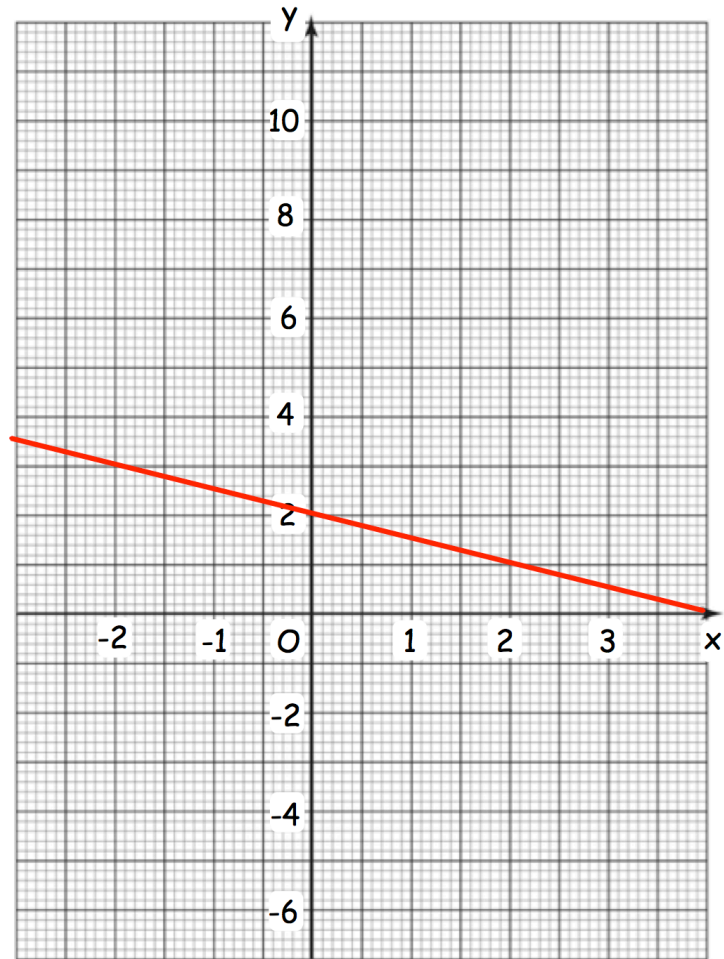
8. On the grid below, the lines A and B are drawn.



Are the lines A and B perpendicular?
Explain your answer.

(3)

9.



The straight line L has equation $y = -\frac{1}{2}x + 2$

(a) Write down the equation of a line parallel to L

.....
(1)

(b) Find an equation of the line that goes through the point (1, 6) and is perpendicular to L

.....
(3)

10. The straight line K has equation $y = 2x - 5$



The straight line J is perpendicular to line K and passes through the point $(-4, 8)$.

Find the equation of line J

.....
(3)

11. A straight line, L, is perpendicular to the line with equation $y = 2x + 3$
L passes through the point $(10, 3)$



Find an equation for the straight line L.

.....
(3)

12. Line A has equation $y = 3x + 2$



Line B is perpendicular to Line A and passes through the point $(6, 5)$

Find the equation of Line B.

.....
(3)

13. The line L passes through the points $(-4, 0)$ and $(2, -2)$
The line M passes through the points $(3, 8)$ and $(2, 2)$



Are the lines L and M perpendicular?
Show your workings

.....
(4)

14. The straight line L_1 has equation $y = 4x - 6$

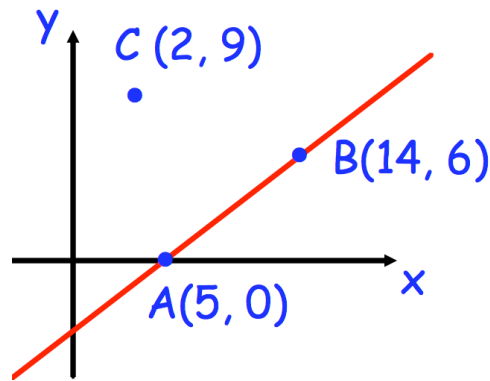


The straight line L_2 is perpendicular to L_1 and passes through the point $(-10, 1)$

Find the equation of the line L_2

.....
(3)

15. A straight line passes through the point A(5, 0) and B(14, 6)



Find the equation of the line perpendicular to AB that passes through C (2, 9)

.....
(4)

16. Point A has coordinates (9, 4)
Point B has coordinates (13, -16)



Find the equation of the line perpendicular to AB that passes through the midpoint of AB

.....
(4)

17. A straight line, L, is perpendicular to the line with equation $5x - 2y + 4 = 0$
L passes through the point (5, -3)



Find an equation for the straight line L.

.....
(4)

18. Line A has equation $y = -\frac{2}{3}x$

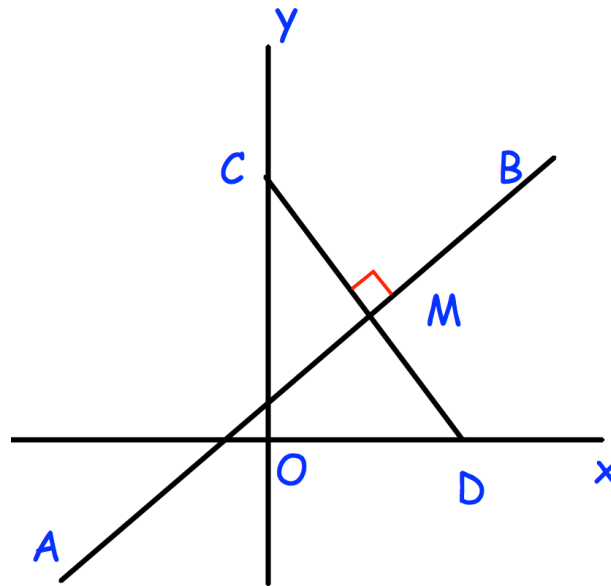


Line B is perpendicular to Line A and passes through the point (4, 15)

Find the coordinates of the point where Line B intersects the x-axis.

.....
(4)

19. Shown below are the straight lines AB and CD



M is the midpoint of CD
AB is perpendicular to CD and passes through M.

C is the point $(0, 12)$
D is the point $(3, 0)$

Find the equation of the line AB.

.....
(6)

20. The point A has coordinates $(3, 11)$
The point B has coordinates $(-9, 7)$
The point C has coordinates $(-7, 1)$



Luna says that angle ABC is a right angle.

Show that Luna is correct.

(3)

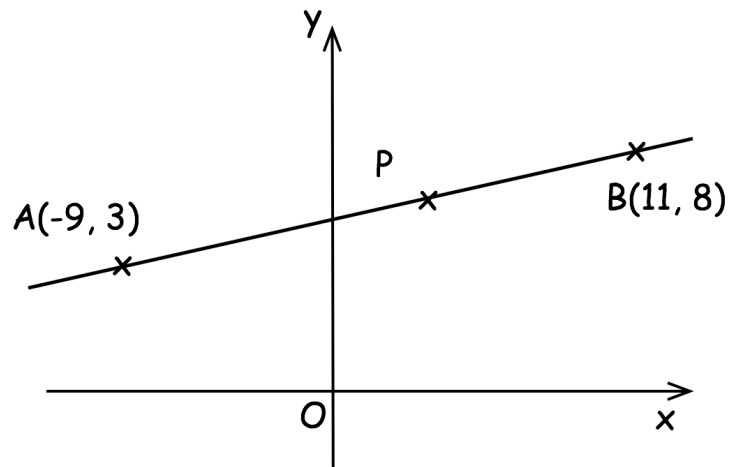
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21. A, B and C have coordinates $(2, 9)$, $(10, -7)$ and $(6, k)$ respectively.
AB is perpendicular to AC



Find k

.....
(3)

22.



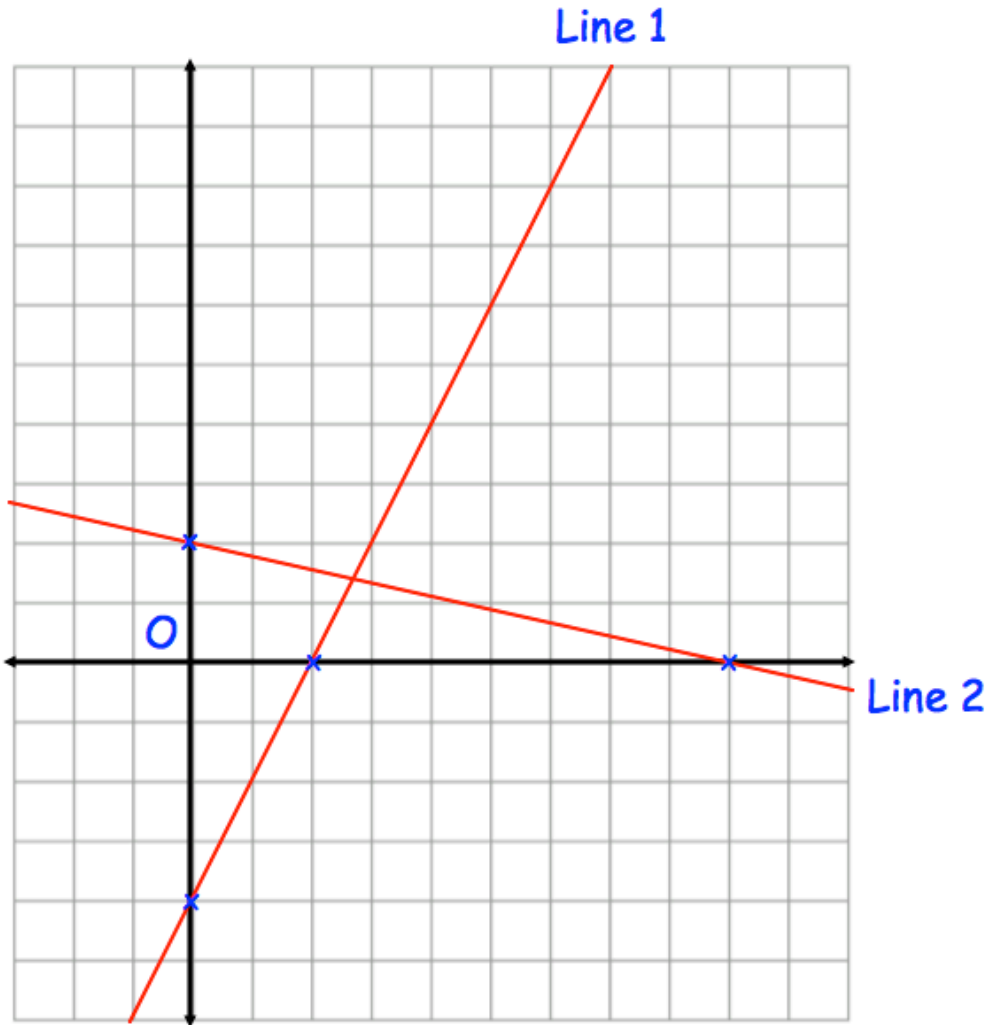
A straight line, L , passes through the points $A(-9, 3)$ and $B(11, 8)$.

The point P lies on line L , such that $AP : PB = 3 : 2$

Find the equation of the line perpendicular to L that passes through P .

.....
(5)

23. Shown are two straight lines drawn on the grid.



Line 1 has equation $y = 3x - 12$

(a) Find the equation of Line 2

.....
(4)

(b) Are the two lines perpendicular?
Explain your answer.

.....
.....
(1)