Name:

Level 2 Further Maths

Parallel Lines
Perpendicular Lines

Corbettmaths

Ensure you have: Pencil or pen

Guidance

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

Revision for this topic

www.corbettmaths.com/more/further-maths/

1. Write down the equation of the line that is parallel to $4x - 2y = 7$ and passes through (9, –3)

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(3)

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2. A straight line L_1 passes through the points (–6, 1) and (–2, –1).
A straight line L_2 passes through the point (5, 7) and is parallel to L_1.

Find the equation of the line L_2

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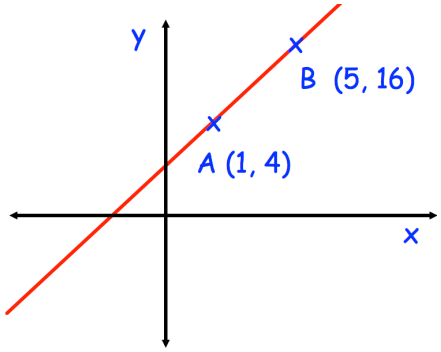
(4)

3. A straight line passes through the point A(1, 4) and B(5, 16)



Find the equation of the line parallel to AB that passes through (–8, 2)

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(4)

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4. The line L passes through the points (–5, 3) and (1, –2).
The line N passes through the points (–22, 1) and (–4, –14).

Bryan says that the lines L and N are parallel.
Is Bryan correct? Explain your answer.

(4)

5. Line L_1 is parallel to $5x - 7y = 31$ and passes through the point (4, 16)

Find the coordinates of the point where L_1 intersects the x-axis.

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(5)

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

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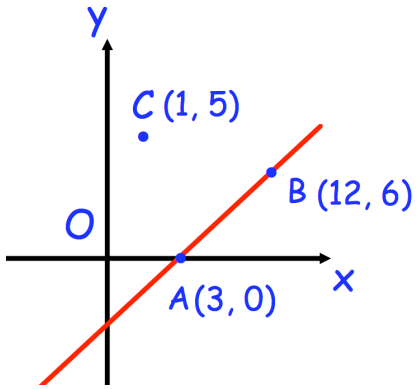
(3)

7. A straight line passes through the point A(1, 4) and B(5, 16)



Find the equation of the line perpendicular to AB that passes through C.

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(4)

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8. The line Q passes through the points (–10, –2) and (–8, –8)
The line R passes through the points (1, 2) and (10, a)

The lines Q and R are perpendicular.

Find a.

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(4)

9. Point A has coordinates (9, 7)
Point B has coordinates (13, –27)

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

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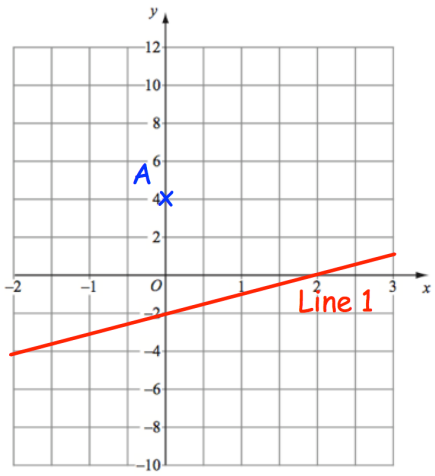
(4)

10.



Calculate the shortest distance between Line 1 and the point A.

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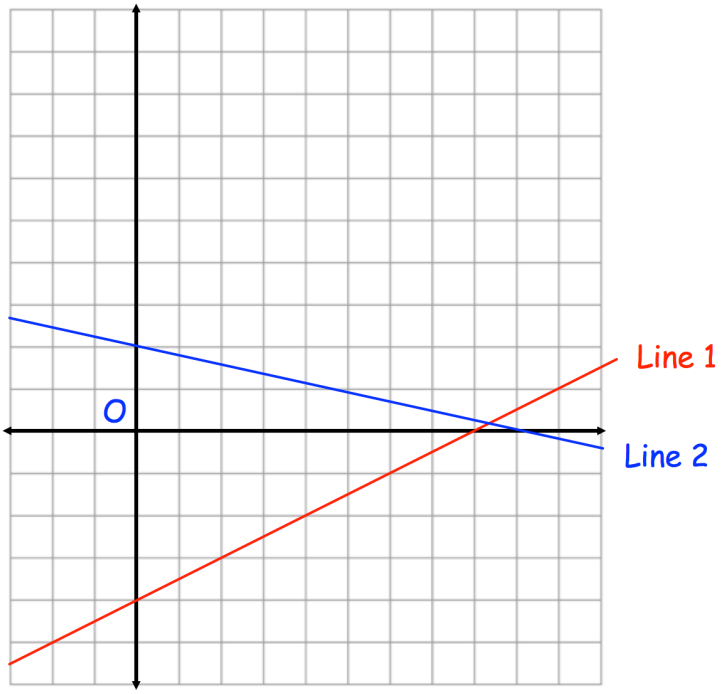
(6)

11. Two straight lines are shown below.



Line 1 has equation $y = \frac{3}{2}x - 24$

Are Line 1 and Line 2 perpendicular?

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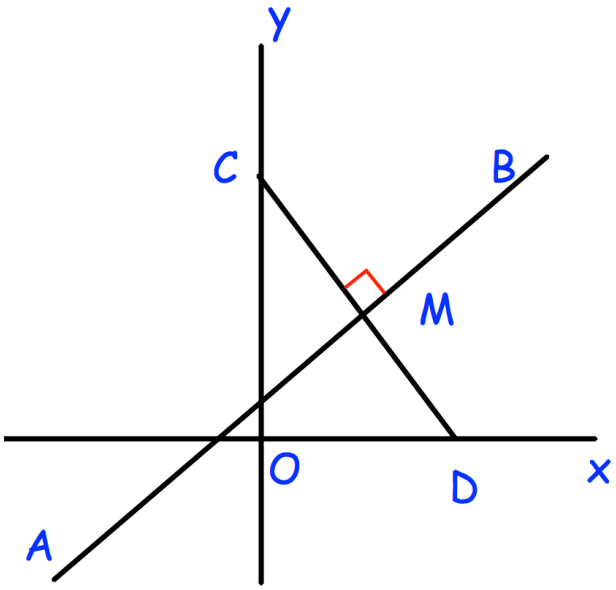
(6)

12. 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 (6, 0)

Find the coordinates of the point where AB crosses the y-axis.

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(6)

13. The line L_1 passes through the points A(–4, 2) and B(11, 7)

The line L_2 is parallel to L_1 and passes through the point C(5, 0)
The line L_3 is perpendicular to L_2 and passes through the point D(–3, 8)

The lines L_2 and L_3 intersect at the point E.

Find the area of triangle OCE

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(7)