Name:

Level 2 Further Maths

Simultaneous Equations (non-linear)

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. Solve the simultaneous equations

$y = x^2 + x - 14$

$y = x - 5$

.....

(4)

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2. Solve the simultaneous equations

$y = x + 3$

$x^2 + y^2 = 149$

.....

(5)

3. Solve the simultaneous equations

$$x - 4y = 2$$

$$x^2 - 8y^2 = 68$$

.....

(5)

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4. Solve the simultaneous equations

$$y = 2x^2 + x + 1$$

$$y = x^2 - 5x - 7$$

.....

(5)

5. Solve the simultaneous equations

$x^2 + 3x - xy = 10$

$2x - y = 4$

.....

(5)

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6. Solve the simultaneous equations

$y = 9x^2 + 11x + 3$

$5x - y + 2 = 0$

.....

(5)

7. Solve the simultaneous equations

$2x + y = 7$

$x^2 - y^2 = 8$

.....

(5)

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8. Solve the simultaneous equations

$y = x^2 - 9x - 3$

$y = x$

.....

(5)

9. Solve the simultaneous equations

$y = x^2 + x - 7$

$4x + 2y + 1 = 0$

.....

(5)

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10. Solve the simultaneous equations

$y = x - 2$

$2x^2 - xy = 11$

.....

(5)

11. Find the coordinates where the line $y = x + 8$ and the curve $y = x^2 + 19x + 80$ intersect

.....

(5)

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12. Find the coordinates where the line $x + y = 3$ and the curve $x^2 + 3y = 27$ intersect

.....

(5)

13. How many points of intersection does the circle $x^2 + y^2 = 8$ have with the line $x + y = 4$?

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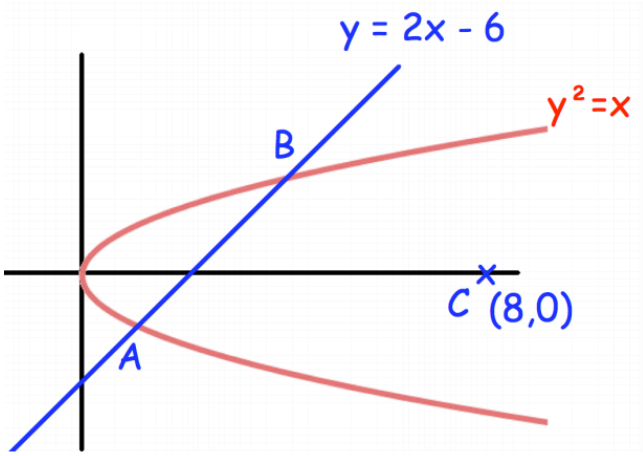
(5)

14. Shown is the curve $y^2 = x$ and the line $y = 2x - 6$



The curve and the line meet at the points A and B.
The point C is (8, 0)

Show ABC is a right angled triangle.

(6)