

Solving equations and inequalities – GCSE Mathematics Paper 3

1. No.3

Circle the correct statement.

[1 mark]

$0.07 \geq 0.7$

$0.07 = 0.7$

$0.07 < 0.7$

$0.07 > 0.7$

2. No.15

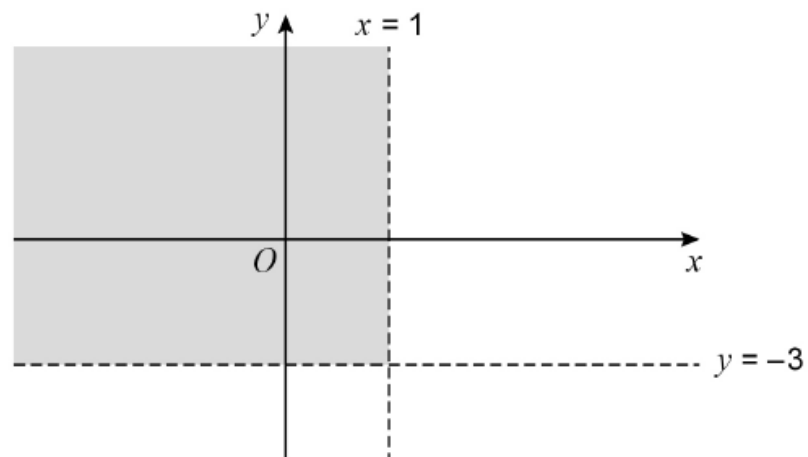
Solve $4 > 11 - \frac{x}{3}$

[2 marks]

Answer _____

3. No.19

The sketch shows the lines $x = 1$ and $y = -3$



Which pair of inequalities describes the shaded region?

Tick **one** box.

[1 mark]

☐

$x < 1$ and $y < -3$

☐

$x < 1$ and $y > -3$

☐

$x > 1$ and $y > -3$

☐

$x > 1$ and $y < -3$

4. No.27

The equation of a curve is $y = (x - 1)^2 - 6$

Circle the coordinates of the turning point.

[1 mark]

$(-1, -6)$

$(1, 6)$

$(-1, 6)$

$(1, -6)$

5. No.7

The pictogram shows information about the houses in a street.

Each house has 3, 4 or 5 bedrooms.

Key:  represents 2 houses

3-bedroom houses	    
4-bedroom houses	    
5-bedroom houses	 

In total, how many bedrooms do these houses have?

[3 marks]

Answer _____

6. No.4

Circle the **two** roots of $(x - 5)(x + 3) = 0$

[1 mark]

-5

-3

3

5

7. No.18(b)

(b) Solve $x(3x - 9) = 4$

Give your answers to 2 decimal places.

[2 marks]

Answer _____

8. No.7

Choose **one** of the following to make a correct statement each time.**[4 marks]**

is less than

is equal to

is greater than

When $a = 3$ $4a$ _____ $a + 7$ When $b = 8$ $2b - 6$ _____ $18 - b$ When $c = 0.5$ $3c$ _____ $c + 1$ When $d = -1$ d _____ d^2

9. No.27

Solve the simultaneous equations

$$7x + 2y = 36$$

$$3x + 2y = 16$$

[3 marks]

 $x =$ _____ $y =$ _____

10. No.5

Solve the simultaneous equations

$$7x + 2y = 36$$

$$3x + 2y = 16$$

[3 marks]

$$x = \underline{\hspace{2cm}} \quad y = \underline{\hspace{2cm}}$$

11. No.18

Work out the **two** roots of $(7x + 1)(2x - 3) = 0$ Circle **both** roots.

[1 mark]

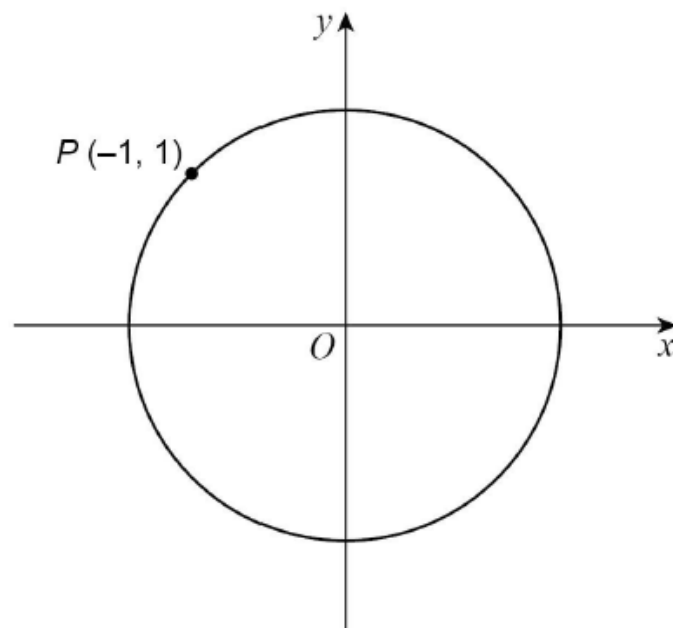
$$-\frac{1}{7}$$

$$\frac{1}{7}$$

$$-\frac{3}{2}$$

$$\frac{3}{2}$$

12. No.20

 $P(-1, 1)$ is a point on the circle, centre O , radius r .Not drawn
accuratelyWork out the value of r .

Circle your answer.

[1 mark]

1

2

 $\sqrt{2}$ $2\sqrt{2}$

13. No.22

The **only** solution to $x^2 + bx + c = 0$ is $x = 5$

Work out the values of b and c .

[2 marks]

$b =$ _____ $c =$ _____