SIMULTANEOUS EQUATIONS

Pearson Edexcel - Tuesday 11 June 2019 - Paper 3 (Calculator) Higher Tier

1.

20 Solve algebraically the simultaneous equations

$$x^2 - 4y^2 = 9$$
$$3x + 4y = 7$$

(Total for Question 20 is 5 marks)

Pearson Edexcel - Tuesday 6 November 2018 - Paper 1 (Non-Calculator) Higher Tier

2.

6 Solve the simultaneous equations

$$5x + y = 21$$
$$x - 3y = 9$$

$x =$ ....

$y =$ ....

(Total for Question 6 is 3 marks)

Pearson Edexcel - Monday 12 November 2018 - Paper 3 (Calculator) Higher Tier

3.

19 Solve algebraically the simultaneous equations

$$2x^2 - y^2 = 17$$
$$x + 2y = 1$$

Pearson Edexcel - Thursday 2 November 2017 - Paper 1 (Non-Calculator) Higher Tier

4.

11 3 teas and 2 coffees have a total cost of £7.80

5 teas and 4 coffees have a total cost of £14.20

Work out the cost of one tea and the cost of one coffee.

tea £...

coffee £...

(Total for Question 11 is 4 marks)

Pearson Edexcel - Thursday 25 May 2017 - Paper 1 (Non-Calculator) Higher Tier

5.

20 Solve algebraically the simultaneous equations

$$x^2 + y^2 = 25$$
$$y - 3x = 13$$

....

(Total for Question 20 is 5 marks)

Pearson Edexcel - Tuesday 13 June 2017 - Paper 3 (Calculator) Higher Tier

6.

2 Solve the simultaneous equations

$$3x + y = -4$$
$$3x - 4y = 6$$

$x =$ ....

$y =$ ....

(Total for Question 2 is 3 marks)

Pearson Edexcel - Specimen Papers Set 2 - Paper 3 (Calculator) Higher Tier

7.

11 Solve the simultaneous equations

$$2x - 4y = 19$$
$$3x + 5y = 1$$

$x =$ ....

$y =$ ....

(Total for Question 11 is 4 marks)

Pearson Edexcel - Sample Paper 2 - (Calculator) Higher Tier

8.

20 Solve algebraically the simultaneous equations

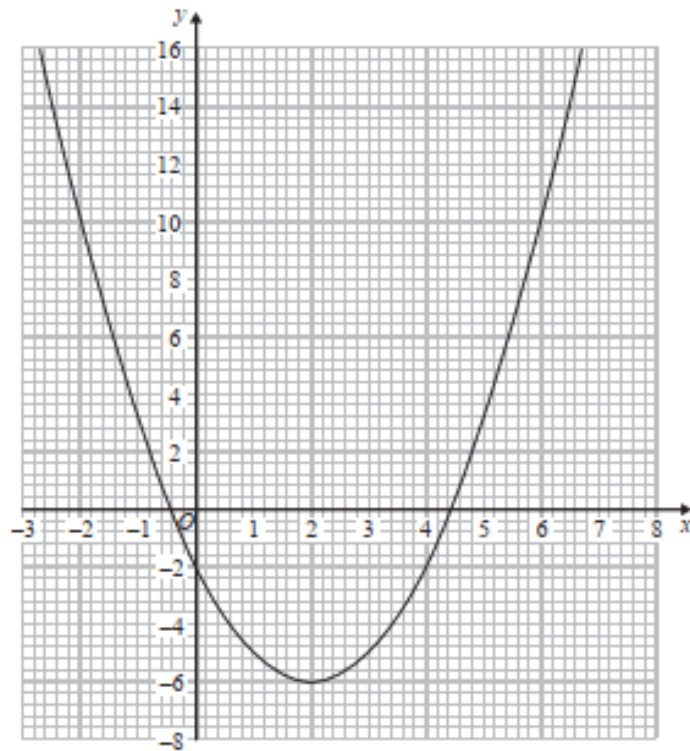$$x^2 + y^2 = 25$$
$$y - 2x = 5$$

Pearson Edexcel - Thursday 26 May 2016 - Paper 1 (Non-Calculator) Higher Tier

9.

19 The diagram shows the graph of $y = x^2 - 4x - 2$

(a) Use the graph to find estimates for the solutions of

(i) $x^2 - 4x - 2 = 0$

....

(ii) $x^2 - 4x - 6 = 0$

....

(3)

(b) Use the graph to find estimates for the values of x that satisfy the simultaneous equations

$$y = x^2 - 4x - 2$$

$$x + y = 6$$

....

(3)

(Total for Question 19 is 6 marks)

Pearson Edexcel - Wednesday 4 November 2015 - Paper 1 (Non-Calculator) Higher Tier

10.

17 Solve

$$2x + 3y = \frac{2}{3}$$
$$3x - 4y = 18$$

$x =$ ....

$y =$ ....

(Total for Question 17 is 4 marks)

Pearson Edexcel - Friday 7 November 2014 - Paper 2 (Calculator) Higher Tier

11.

15 A cinema sells adult tickets and child tickets.

The total cost of 3 adult tickets and 1 child ticket is £30
The total cost of 1 adult ticket and 3 child tickets is £22

Work out the cost of an adult ticket and the cost of a child ticket.

adult ticket £..........................

child ticket £..........................

(Total for Question 15 is 4 marks)

Pearson Edexcel - Monday 9 June 2014 - Paper 1 (Non-Calculator) Higher Tier

12.

18 Solve the simultaneous equations

$$4x + y = 25$$
$$x - 3y = 16$$

$x =$ ....

$y =$ ....

(Total for Question 18 is 3 marks)

Pearson Edexcel - Friday 13 June 2014 - Paper 2 (Calculator) Higher Tier

13.

26 Solve the equations

$$x^2 + y^2 = 36$$
$$x = 2y + 6$$

(Total for Question 26 is 5 marks)

Pearson Edexcel - Wednesday 6 November 2013 - Paper 1 (Non-Calculator) Higher Tier

14.

15 Solve the simultaneous equations

$$3x + 4y = 5$$
$$2x - 3y = 9$$

$x = $ ....

$y = $ ....

(Total for Question 15 is 4 marks)

Pearson Edexcel - Tuesday 11 June 2013 - Paper 1 (Non-Calculator) Higher Tier

15.

18 Solve the simultaneous equations

$$4x + 7y = 1$$
$$3x + 10y = 15$$

x = ...

y = ...

(Total for Question 18 is 4 marks)

Pearson Edexcel - Friday 14 June 2013 - Paper 2 (Calculator) Higher Tier

16.

25 Solve the simultaneous equations
$$x^2 + y^2 = 9$$
$$x + y = 2$$

Give your answers correct to 2 decimal places.

x = ... y = ...

or x = ... y = ...

(Total for Question 25 is 6 marks)

Pearson Edexcel - Tuesday 6 November 2012 - Paper 1 (Non-Calculator) Higher Tier

17.

22 Solve the simultaneous equations

$$3x + 2y = 4$$
$$4x + 5y = 17$$

$x = $ ....

$y = $ ....

(Total for Question 22 is 4 marks)

Pearson Edexcel - Monday 11 June 2012 - Paper 1 (Non-Calculator) Higher Tier

18.

20 Solve the simultaneous equations

$$5x + 2y = 11$$
$$4x - 3y = 18$$

$x =$ ....

$y =$ ....

(Total for Question 20 is 4 marks)

Pearson Edexcel - Monday 5 March 2012 - Paper 4 (Calculator) Higher Tier

19.

18. Solve the equations

$$3x + 5y = 19$$
$$4x - 2y = -18$$

x = ...

y = ...

(Total 4 marks)

Pearson Edexcel - Wednesday 9 November 2011 - Paper 3 (Non-Calculator) Higher Tier

20.

12. Solve the simultaneous equations

$$3x + 4y = 200$$
$$2x + 3y = 144$$

x = ...

y = ...

(Total 4 marks)

Pearson Edexcel - Monday 6 June 2011 - Paper 3 (Non-Calculator) Higher Tier

21.

19. Solve the simultaneous equations

$$4x + y = 10$$
$$2x - 3y = 19$$

$x =$ ....

$y =$ ....

(Total 3 marks)

Pearson Edexcel - Tuesday 9 November 2010 - Paper 3 (Non-Calculator) Higher Tier

22.

21. Solve the simultaneous equations

$$6x + 2y = -3$$
$$4x - 3y = 11$$

$x =$ ...., $y =$ ....

(Total 4 marks)

Pearson Edexcel - Monday 7 June 2010 - Paper 3 (Non-Calculator) Higher Tier

23.

21. Solve the simultaneous equations

$$3x + 2y = 8$$
$$2x + 5y = -2$$

$x =$ ....

$y =$ ....

(Total 4 marks)

Pearson Edexcel - Thursday 5 November 2009 - Paper 3 (Non-Calculator) Higher Tier

24.

20. Solve the simultaneous equations

$$4x + y = -1$$

$$4x - 3y = 7$$

$x =$ .... $y =$ ....

(Total 3 marks)

25.

20 Solve.

$$x^2 + y^2 = 34$$
$$y = x + 2$$

Show your working.

$x =$ .... $y =$ ....

$x =$ .... $y =$ .... **[6]**

8   The diagrams show the price paid by two groups of people visiting a funfair.

5 adults	£	
4 children	£	
	Total £	78

3 adults	£	
6 children	£	
	Total £	63

Assume each adult pays the same price and each child pays the same price.

Find the price for an adult and the price for a child.

Adult price = £ ....

Child price = £ ....

[5]

27.

5 Marcin buys 7 rulers and 15 crayons for £7.
A ruler costs 12p more than a crayon.

Find the cost of one crayon.

cost of one crayon = ... p [5]

19 Solve these simultaneous equations algebraically.

$$y = 2x^2 - 7x + 4$$
$$y = 4x - 1$$

$x =$ .... $y =$ ....

$x =$ .... $y =$ .... **[6]**

18   Solve the simultaneous equations

$$2x + 4y = -9$$

$$2y = 4x - 7$$

[4 marks]

$x =$ _____ $y =$ _____

21 Solve the simultaneous equations

$$2x + 3y = 5p$$
$$y = 2x + p$$

where p is a constant.

Give your answers in terms of p in their simplest form.

[4 marks]

_____

_____

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_____

$x =$ _____ $y =$ _____

19   In a chess club, there are x boys and y girls.

19 (a)   If 5 more boys and 8 more girls join, there would be half as many boys as girls.

Show that $y = 2x + 2$

[2 marks]

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_____

_____

19 (b)   If instead,

10 more boys and 1 more girl join, there would be the same number of boys and girls.

Work out x and y.

[3 marks]

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_____

_____

_____

_____

$x =$ _____

$y =$ _____

32.

28 $y = p \times q^{x-1}$ where p and q are numbers.

  $y = 10$ when $x = 1$
  $y = 0.3125$ when $x = 6$

Work out the value of y when $x = 3$

[5 marks]

Answer _____

33.

10   Solve the simultaneous equations.

$$2x + y = 18$$
$$x - y = 6$$

[3 marks]

Answer _____

34.

25    $f(x) = 2x + c$

$g(x) = cx + 5$

$fg(x) = 6x + d$

c and d are constants.

Work out the value of d.

[3 marks]

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_____

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_____

Answer _____