SUBSTITUTION

Pearson Edexcel - Thursday 4 June 2020 - Paper 2 (Calculator) Foundation Tier

1.

15 $T = 3x + 4y$

(a) Work out the value of T when $x = 5$ and $y = -7$

....

(2)

(b) Work out the value of y when $T = 38$ and $x = 6$

....

(2)

(Total for Question 15 is 4 marks)

Pearson Edexcel - Thursday 6 June 2019 - Paper 2 (Calculator) Foundation Tier

2.

11 $P = 7r + 3q$

Work out the value of P when $r = 5$ and $q = -4$

....

(Total for Question 11 is 2 marks)

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

3.

9 $g = 9$
$h = 4$

Work out the value of $2g + 3h$

....

(Total for Question 9 is 2 marks)

Pearson Edexcel - Thursday 24 May 2018 - Paper 1 (Non-Calculator) Foundation Tier

4.

16 $P = 4x + 3y$

$x = 5$
$y = -2$

(a) Work out the value of P.

....

(2)

(b) Expand $4e(e + 2)$

....

(2)

(c) Solve $3(m - 4) = 21$

$m =$ ....

(2)

(Total for Question 16 is 6 marks)

Pearson Edexcel – Specimen 2 - Paper 1 (Non-Calculator) Foundation Tier

5.

10 (a) Solve $3x + 7 = 1$

$x =$ ....

(2)

(b) $f = 6$
$g = 5$

Work out the value of $3f - 2g$

....

(2)

(Total for Question 10 is 4 marks)

6.

27 At a depth of x metres, the temperature of the water in an ocean is $T\,°C$.
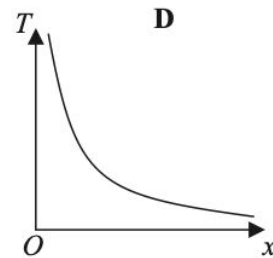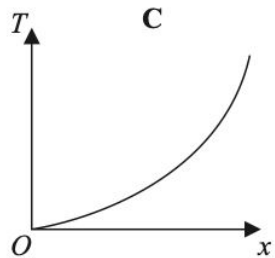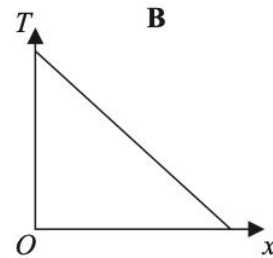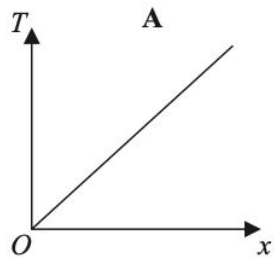At depths below 900 metres, T is inversely proportional to x.

T is given by

$$T = \frac{4500}{x}$$

(a) Work out the difference in the temperature of the water at a depth of 1200 metres and the temperature of the water at a depth of 2500 metres.

....°C

(3)

Here are four graphs.

One of the graphs could show that T is inversely proportional to x.

(b) Write down the letter of this graph.

....

(1)

(Total for Question 27 is 4 marks)

7.

10 Complete this table of values.

n	$3n + 2$
12	....
....	47

(Total for Question 10 is 3 marks)

8.

16 Four identical trapeziums are placed on a coordinate grid as shown.

Not to scale
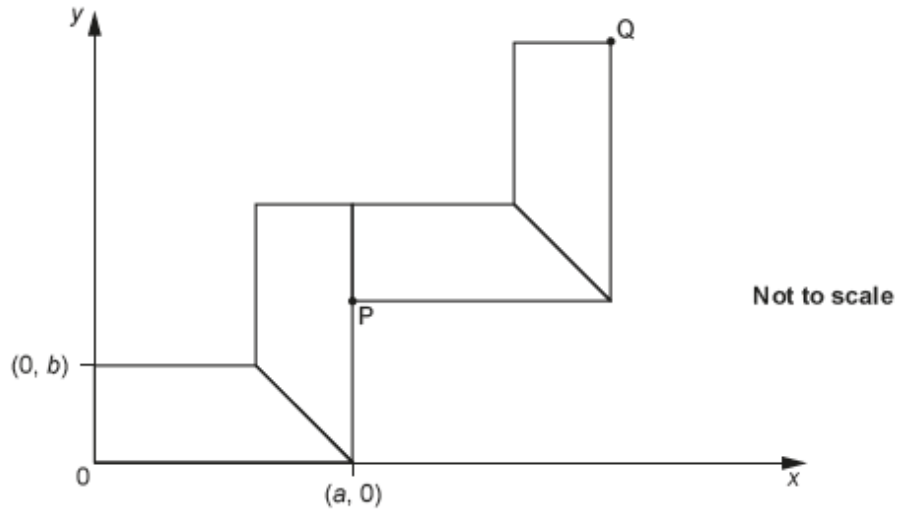
(a) Write down algebraic expressions for the coordinates of point P.

(a) (.......................... , ...) **[2]**

(b) The coordinates of point Q are (16, 13).

Work out the value of *a* and the value of *b*.

(b) *a* = ...

b = ... **[4]**

9.

6 You are given that $5y = 4x$.

  (a) Find the value of y when $x = 10$.

  (a) $y =$ .... **[2]**

  (b) Write y in terms of x.

  (b) $y =$ .... **[1]**

10.

6   **(a)** Simplify.

      (i) $2p + 5p - 3p$

                                          (a)(i) .... **[1]**

      (ii) $6j + 3k - j - 5k$

                                            (ii) .... **[2]**

  (b) Find the value of $10h + 6t$ when $h = 12$ and $t = 4$.

                                            (b) .... **[2]**

  (c) Rearrange this formula to make d the subject.

        $e = f - 7d$

                                            (c) .... **[2]**

11.

18 $f = 5x + 2y$
$x = 3$ and $y = -2$

Find the value of f.

....

(Total for Question 18 is 2 marks)

12.

5 **(a)** Find the value of $3a + 2b$ when $a = 16$ and $b = 7$.

(a) .... [2]

(b) Use the formula

$$v = u + at$$

to find the final velocity, when

- the initial velocity is $2\,m/s$
- the acceleration is $1.5\,m/s^2$
- the time is 6 seconds.

(b) ....m/s [2]

(c) Make d the subject of this formula.

$$c = 7d$$

(c) .... [1]

13.

14 The value of a car £V is given by

$$V = 20\,000 \times 0.9^t$$

where t is the age of the car in complete years.

(a) Write down the value of V when $t = 0$.

(a) £ .... [1]

(b) What is the value of V when $t = 3$?

(b) £ .... [2]

(c) After how many complete years will the car's value drop below £10 000?

(c) .... [2]

AQA Thursday 4 June 2020 – Morning (Calculator) Foundation Tier

14.

3   Circle the expression that has the **smallest** value when $x = 4$

[1 mark]

$$5 - x \qquad \frac{1}{2}x \qquad x + 1 \qquad x - 4$$

AQA Thursday 11 June 2019 – Morning (Calculator) Foundation Tier

15.

22   Here is a formula.

$$T = n^2 - \frac{12}{n}$$

22 (a)   Work out T when $n = 5$

[1 mark]

_____

_____

_____

Answer _____

22 (b)   Why is T **always** positive when n is negative?

[2 marks]

_____

_____

_____

_____

_____

_____

16.

19 $a = 7$ and $b = 2$

Work out the value of $\dfrac{a}{b} - a^b$

[3 marks]

_____

_____

_____

_____

_____

_____

_____

_____

_____

Answer _____

17.

13   Here is a formula for the amount of water needed to cook rice.

$$w = 1.5r + 0.5$$

w is the number of cups of water needed

r is the number of cups of rice to be cooked

13 (a)   How many cups of water are needed to cook 7 cups of rice?

[2 marks]

_____

_____

_____

Answer   _____

13 (b)   How many cups of rice can be cooked with 20 cups of water?

[3 marks]

_____

_____

_____

_____

_____

_____

_____

Answer   _____

18.

12   A football team has P points.

$$P = 3W + D$$

W is the number of wins
D is the number of draws

12 (a)   A team has 6 wins and 2 draws.

How many points does the team have?

[1 mark]

_____

_____

Answer _____

12 (b)   After 33 games a different team has 53 points.
11 games were draws.

How many games has this team **lost**?

[4 marks]

_____

_____

_____

_____

_____

_____

Answer _____

19.

19   The value of x can be 2 or 5

The value of y can be 3 or 12

19 (a)   List the possible values of xy

[2 marks]

_____

_____

Answer _____

19 (b)   Work out the **least** possible value of $\dfrac{x-y}{x}$

You **must** show your working.

[2 marks]

_____

_____

_____

_____

_____

Answer _____

20.

12   Here are three expressions.

$$\frac{b}{a} \qquad\qquad a-b \qquad\qquad ab$$

When $a=2$ and $b=-6$ which expression has the smallest value?

You **must** show your working.

[2 marks]

_____

_____

_____

_____

Answer _____

21.

20 (a) w and x are **whole** numbers.

$w > 40$

$x < 30$

Work out the **smallest** possible value of $w - x$

[2 marks]

_____

_____

_____

Answer _____

20 (b) y and z are **whole** numbers.

$y < 60$

$z \leqslant 50$

Work out the **largest** possible value of $y + z$

[2 marks]

_____

_____

_____

Answer _____

22.

23 Kelly is trying to work out the two values of w for which $3w - w^3 = 2$

Her values are   1 and −1

Are her values correct?

You **must** show your working.

[2 marks]

_____

_____

_____

_____

23.

15   A company has bikes for hire.

The cost, £C, to hire a bike for n days is given by the formula

$$C = 12 + \frac{27}{4}(n - 1)$$

15 (a)   Write down the cost to hire a bike for 1 day.
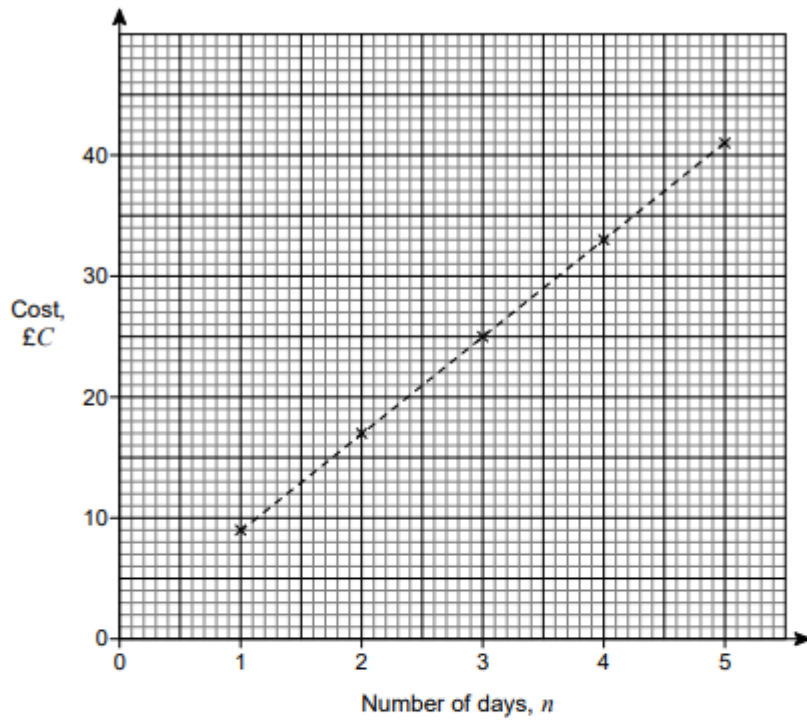
[1 mark]

Answer £ _____

15 (b)

Special offer
Hire a bike for £9 per day

Is it cheaper to hire a bike for 7 days using the special offer?

You **must** show your working.

[2 marks]

_____

_____

_____

_____

_____

_____

15 (c) The graph shows the cost to hire a bike for one to five days at a different company.

The cost, £C, to hire a bike for n days using this company is given by the formula

$$C = a + b(n - 1)$$

Work out the values of a and b.

[3 marks]

_____

_____

_____

$a = $ _____ $b = $ _____

24.

8   Work out the value of $5x + 9y$ when $x = 7$ and $y = -2$

[2 marks]

Answer _____