CHANGING THE SUBJECT OF A FORMULA

Pearson Edexcel - Tuesday 19 May 2020 - Paper 1 (Non-Calculator) Higher Tier

1.

17 Make f the subject of the formula $d = \dfrac{3(1-f)}{f-4}$

(Total for Question 17 is 4 marks)

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

2.

15 Make m the subject of the formula $f = \dfrac{3m + 4}{m - 1}$

....

(Total for Question 15 is 3 marks)

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

3.

2 $v^2 = u^2 + 2as$

$u = 12$ $a = -3$ $s = 18$

(a) Work out a value of v.

....

(2)

(b) Make s the subject of $v^2 = u^2 + 2as$

....

(2)

(Total for Question 2 is 4 marks)

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

4.

14 (a) Simplify $\dfrac{x^2 - 16}{2x^2 - 5x - 12}$

(3)

(b) Make v the subject of the formula $w = \dfrac{15(t - 2v)}{v}$

(3)

(Total for Question 14 is 6 marks)

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

5.

3 Make t the subject of the formula $\quad y = \dfrac{t}{3} - 2a$

....

(Total for Question 3 is 2 marks)

Pearson Edexcel - Specimen Papers Set 1 - Paper 1 (Non-Calculator) Higher Tier

6.

13 $m = \sqrt{\dfrac{k^3 + 1}{4}}$

Make k the subject of the formula.

....

(Total for Question 13 is 3 marks)

Pearson Edexcel - Specimen Papers Set 1 - Paper 2 (Calculator) Higher Tier

7.

1 Make t the subject of the formula $\quad w = 3t + 11$

....

(Total for Question 1 is 2 marks)

Pearson Edexcel - Sample Paper 1 - (Non-Calculator) Higher Tier

8.

17 Make a the subject of $\quad a + 3 = \dfrac{2a + 7}{r}$

....

(Total for Question 17 is 3 marks)

Pearson Edexcel - Thursday 9 June 2016 - Paper 2 (Calculator) Higher Tier

9.

18 (a) Simplify $2a^3b \times 5a^2b^3$

....

(2)

(b) Make y the subject of the formula $p = \sqrt{\dfrac{x+y}{5}}$

....

(3)

(Total for Question 18 is 5 marks)

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

10.

21 (a) Write as a single fraction in its simplest form $\dfrac{5}{2-x} - \dfrac{4}{x}$

....

(3)

(b) Make y the subject of the formula

$$t = \dfrac{2-3y}{y+2}$$

....

(4)

(Total for Question 21 is 7 marks)

Pearson Edexcel - Friday 6 November 2015 - Paper 2 (Calculator) Higher Tier

11.

11 (a) Solve $3x^2 = 147$

....

(2)

(b) Work out the value of 2^{-3}

....

(1)

(c) Simplify $(3x^2)^3$

....

(2)

$w = 4p - 16$

(d) Make p the subject of this formula.

....

(2)

(Total for Question 11 is 7 marks)

Pearson Edexcel - Thursday 4 June 2015 - Paper 1 (Non-Calculator) Higher Tier

12.

20 Make a the subject of the formula $\quad p = \dfrac{3a + 5}{4 - a}$

....

(Total for Question 20 is 4 marks)

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

13.

22 (a) Simplify fully $\dfrac{2x^2 - 5x + 3}{x^2 + 5x - 6}$

....
(3)

(b) Make m the subject of

$$\frac{m}{v} - \frac{t}{b} = \frac{m - t}{R}$$

....
(4)

(Total for Question 22 is 7 marks)

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

14.

12 You can change temperatures from °F to °C by using the formula

$$C = \frac{5(F - 32)}{9}$$

F is the temperature in °F.
C is the temperature in °C.

The minimum temperature in an elderly person's home should be 20 °C.

Mrs Smith is an elderly person.
The temperature in Mrs Smith's home is 77 °F.

*(a) Decide whether or not the temperature in Mrs Smith's home is lower than the
minimum temperature should be.

(3)

(b) Make F the subject of the formula $C = \frac{5(F - 32)}{9}$

....

(3)

(Total for Question 12 is 6 marks)

Pearson Edexcel - Friday 8 November 2013 - Paper 2 (Calculator) Higher Tier

15.

21 (a) Factorise $4x^2 - 9$

....

(1)

(b) Make m the subject of

$$g - 3m = am + 5$$

....

(3)

(Total for Question 21 is 4 marks)

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

16.

18 Make p the subject of the formula $y = 3p^2 - 4$

....

(Total for Question 18 is 3 marks)

Pearson Edexcel - Monday 4 March 2013 - Paper 2 (Calculator) Higher Tier

17.

14 $A = 4bc$

$A = 100$
$b = 2$

(a) Work out the value of c.

....
(2)

$m = \sqrt{\dfrac{k+1}{4}}$

(b) Make k the subject of the formula.

....
(3)

(Total for Question 14 is 5 marks)

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

18.

24 Make *t* the subject of the formula

$$p = \frac{3 - 2t}{4 + t}$$

....

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

19.

8 (a) Expand $3(2y - 5)$

....

(1)

(b) Factorise completely $8x^2 + 4xy$

....

(2)

(c) Make *h* the subject of the formula

$$t = \frac{gh}{10}$$

$h = $ ....

(2)

20.

20 Make t the subject of the formula $2(d - t) = 4t + 7$

$t = $ ....

(Total for Question 20 is 3 marks)

21.

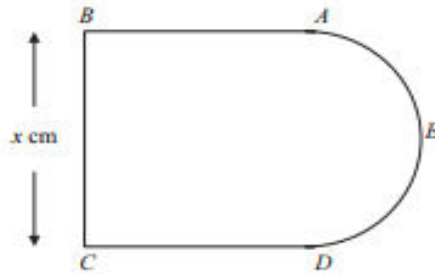**21.** Here is a shape *ABCDE*.

Diagram **NOT**
accurately drawn

AB, *BC* and *CD* are three sides of a square.
BC = *x* cm.
AED is a semicircle with diameter *AD*.

The perimeter, *P* cm, of the shape *ABCDE* is given by the formula

$$P = 3x + \frac{\pi x}{2}$$

(a) Rearrange this formula to make *x* the subject.

....

(2)

The area, A cm^2, of this shape is given by $A = kx^2$ where k is a constant.

(b) Find the exact value of k.
Give your answer in its simplest form.

....

(3)

(Total 5 marks)

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

22.

17. $y = p - 2qx^2$

$p = -10$
$q = 3$
$x = -5$

(a) Work out the value of y.

....
(2)

(b) Rearrange $y = p - 2qx^2$

to make x the subject of the formula.

....
(3)

(Total 5 marks)

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

23.

23. Make k the subject of the formula $\quad t = \dfrac{k}{k-2}$

....

(Total 4 marks)

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

24.

13. Make v the subject of the formula $\quad t = \dfrac{v}{5} + 2$

$v = $ ....

(Total 2 marks)

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

25.

26. P is inversely proportional to V.

When $V = 8$, $P = 5$

(a) Find a formula for P in terms of V.

$P =$ ....

(3)

(b) Calculate the value of P when $V = 2$

....

(1)

(Total 4 marks)

Pearson Edexcel - Friday 11 June 2010 - Paper 4 (Calculator) Higher Tier

26.

17. Make A the subject of the formula

$$r = \sqrt{\frac{A}{3}}$$

$A =$ ....

(Total 2 marks)

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

27.

16. Make q the subject of the formula $5(q + p) = 4 + 8p$
    Give your answer in its simplest form.

$q = $ ....
                                        (Total 3 marks)

OCR GSCE – Thursday 8 November 2018 – Paper 5 (Non-Calculator) Higher Tier

28.

9 Rearrange this formula to make y the subject.

$$x = y^2 + 7$$

.... **[2]**

29.

1 Use the formula $s = ut + \frac{1}{2}at^2$.

(a) Calculate s when $u = 5$, $t = 10$ and $a = 3$.

(a) $s =$ .... [2]

(b) Make a the subject of the formula.

(b) $a =$ .... [2]

30.

5 **(a)** Rearrange the equation to make x the subject.

$$y = 7x - 3$$

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

(b) Factorise.

(i) $x^2 - xy$

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

(ii) $x^2 + 8x + 12$

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

31.

15   Rearrange $a = \dfrac{b}{c} + 5$ to make c the subject.

[3 marks]

_____

_____

_____

_____

_____

_____

Answer _____

AQA GSCE – Tuesday 11 June 2019 – Paper 3 (Calculator) Higher Tier

32.

8   Rearrange $y = 3x - 2$ to make x the subject.

Circle your answer.

[1 mark]

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

AQA GSCE – Monday 12 November 2018 – Paper 3 (Calculator) Higher Tier

33.

26    $f(x) = \dfrac{2x+3}{x-4}$

Work out $f^{-1}(x)$

[4 marks]

_____

_____

_____

_____

_____

_____

Answer _____

34.

28     $f(x) = 5 - x$ and $g(x) = 3x + 7$

28 (a)   Simplify $f(2x) + g(x - 1)$

[3 marks]

_____

_____

_____

_____

Answer _____

28 (b)   Solve $g^{-1}(x) = 2x$

[3 marks]

_____

_____

_____

_____

_____

_____

_____

_____

$x =$ _____

AQA GSCE – Wednesday 8 November 2017 – Paper 3 (Calculator) Higher Tier

35.

9 (a) Rearrange $v = u + at$ to make t the subject of the formula.

[2 marks]

_____

_____

_____

_____

Answer _____

9 (b) Complete this table with consistent metric units.

[2 marks]

Distance	Time	Speed	Acceleration
m	s		

AQA GSCE – Tuesday 13 June 2017 – Paper 3 (Calculator) Higher Tier

36.

3 Rearrange $2x = \dfrac{y}{w}$ to make w the subject.

Circle your answer.

[1 mark]

$$w = \frac{2y}{x} \qquad w = \frac{2x}{y} \qquad w = \frac{y}{2x} \qquad w = \frac{x}{2y}$$

37.

19 $f(x) = 3x$

Circle the expression for $f^{-1}(x)$

[1 mark]

$$-3x \qquad \frac{3}{x} \qquad \frac{1}{3x} \qquad \frac{x}{3}$$