WRITING, SIMPLIFYING AND ORDERING FUNCTIONS

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

1.

10 (a) Simplify $\left(\frac{1}{m^2}\right)^0$

(1)

(b) Simplify $\frac{8(x-4)}{(x-4)^2}$

(1)

(c) Simplify $(3n^4w^2)^3$

(2)

(Total for Question 10 is 4 marks)

Pearson Edexcel - Monday 8 June 2020 - Paper 3(Calculator) Higher Tier

2.

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(b) Simplify $\frac{c^3d^4}{c^2d}$

(1)

(2)

(c) Solve $\frac{5x}{2} > 7$

(2)

(Total for Question 1 is 5 marks)

Pearson Edexcel - Monday 8 June 2020 - Paper 3 (Calculator) Higher Tier

3.

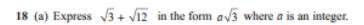


(b) Expand and simplify (x-3)(2x+3)(4x+5)

(3)

(Total for Question 12 is 6 marks)

Pearson Edexcel - Tuesday 21 May 2019 - Paper 1 (Non-Calculator) Higher Tier



(2)

(b) Express $\left(\frac{1}{\sqrt{3}}\right)^7$ in the form $\frac{\sqrt{b}}{c}$ where b and c are integers.

(3)

(Total for Question 18 is 5 marks)

Pearson Edexcel - Tuesday 6 November 2018 - Paper 1 (Non-Calculator) Higher Tier 5.

$$\frac{(\sqrt{18} + \sqrt{2})^2}{\sqrt{8} - 2}$$

20 Show that $\frac{(\sqrt{18} + \sqrt{2})^2}{\sqrt{8} - 2}$ can be written in the form $a(b + \sqrt{2})$ where a and b are integers.

(Total for Question 20 is 3 marks)

Pearson Edexcel - Monday 12 November 2018 - Paper 3 (Calculator) Higher Tier 6.

)	(a) Expand and simplify $(x-2)(2x+3)(x+1)$		
			_
		(3)	
	$\frac{y^4 \times y^n}{y^2} = y^{-3}$		
	(b) Find the value of n.		
	(c)		
	•	(2)	_
	(c) Solve $5x^2 - 4x - 3 = 0$		
	Give your solutions correct to 3 significant figures.		

(3)

(Total for Question 9 is 8 marks)

2 Expand a	and simplify	5(p+3)	-2(1-2p)
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Pearson Edexcel - Thursday 2 November 2017 - Paper 1 (Non-Calculator) Higher Tier

8.

16 y is directly proportional to $\sqrt[3]{x}$

$$y = 1\frac{1}{6}$$
 when $x = 8$

Find the value of y when x = 64

(Total for Question 16 is 3 marks)

Pearson Edexcel - Thursday 8 June 2017 - Paper 2 (Calculator) Higher Tier

9.

11 Solve
$$\frac{3x-2}{4} - \frac{2x+5}{3} = \frac{1-x}{6}$$



(Total for Question 11 is 4 marks)

Pearson Edexcel - Thursday 8 June 2017 - Paper 2 (Calculator) Higher Tier 10.

19 $2 - \frac{x+2}{x-3} - \frac{x-6}{x+3}$ can be written as a single fraction in the form $\frac{ax+b}{x^2-9}$ where a and b are integers.

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



(Total for Question 19 is 4 marks)

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

11.

14 Show that
$$\frac{(4-\sqrt{3})(4+\sqrt{3})}{\sqrt{13}}$$
 simplifies to $\sqrt{13}$

(Total for Question 14 is 2 marks)

Pearson Edexcel - Specimen Papers Set 2 - Paper 1 (Non-Calculator) Higher Tier 12.

17 Solve
$$x^2 - 6x - 8 = 0$$

Write your answer in the form $a \pm \sqrt{b}$ where a and b are integers.

(Total for Question 17 is 3 marks)

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

13.

20 Show that
$$\frac{3x+6}{x^2-3x-10} + \frac{x+5}{x^3-25x}$$
 simplifies to ax where a is an integer.

(Total for Question 20 is 4 marks)

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

3	(a) Expand and simplify $3(y-2) + 5(2y+1)$	
	(b) Simplify 5 <i>u</i> ² <i>u</i> ⁴ × 7 <i>uu</i> ³	(2)
		(2)
	(Total for Question	n 3 is 4 marks)
Pea 15.	arson Edexcel - Specimen Papers Set 2 - Paper 2 (Calculator) Highe	er Tier
18	Simplify fully $(\sqrt{a} + \sqrt{4b})(\sqrt{a} - 2\sqrt{b})$	
	(Total for Question	18 is 3 marks)

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



(Total for Question 15 is 3 marks)

Pearson Edexcel - Specimen Papers Set 1 - Paper 3 (Calculator) Higher Tier

17.

(Total for Question 11 is 2 marks)

Pearson Edexcel - Specimen Papers Set 1 - Paper 3 (Calculator) Higher Tier

18.

14 Write

$$4 - \left[\left(x + 3 \right) \div \frac{x^2 + 5x + 6}{x - 2} \right]$$

as a single fraction in its simplest form. You must show your working.

(Total for Question 14 is 4 marks)

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

19.

23 Show that $\frac{1}{1+\frac{1}{\sqrt{2}}}$ can be written as $2-\sqrt{2}$

(Total for Question 23 is 3 marks)

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

20.

13 d is inversely proportional to c

When c = 280, d = 25

Find the value of d when c = 350

d = _____

(Total for Question 13 is 3 marks)

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

21.

16 Show that
$$\frac{1}{6x^2+7x-5} \div \frac{1}{4x^2-1}$$
 simplifies to $\frac{ax+b}{cx+d}$ where a, b, c and d are integers.

(Total for Question 16 is 3 marks)

Pearson Edexcel - Thursday 26 May 2016 - Paper 1 (Non-Calculator) Higher Tier 22.

24 Given that $y \propto \frac{1}{x^2}$, complete this table of values.

x	1	2	5	10
У				1

(Total for Question 24 is 4 marks)

Pearson Edexcel - Thursday 9 June 2016 - Paper 2 (Calculator) Higher Tier 23.

24 (a) Simplify fully
$$\frac{3-x}{3x^2-5x-12}$$

(2)

(b) Write $\frac{x}{x-1} - \frac{x}{x+1}$ as a single fraction in its simplest form.

(3)

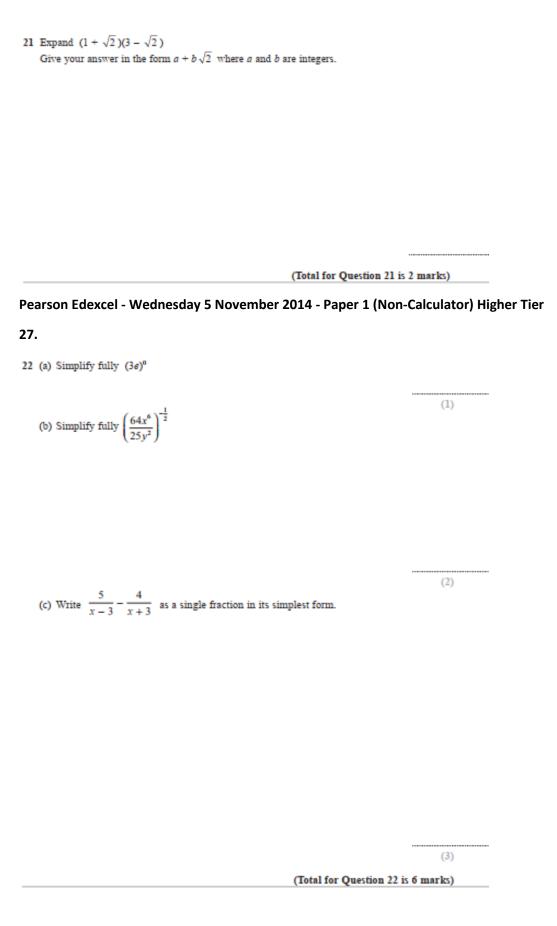
(Total for Question 24 is 5 marks)

Pearson Edexcel - Friday 6 November 2015 - Paper 2 (Calculator) Higher Tier 24.

22 Alison is using the quadratic formula to solve a quadratic equation. She substitutes values into the formula and correctly gets	
$x = \frac{-7 \pm \sqrt{49 - 32}}{4}$	
Work out the quadratic equation that Alison is solving. Give your answer in the form $ax^2 + bx + c = 0$, where a , b and c are integers.	
(Total for Question	22 is 3 marks)
Pearson Edexcel - Thursday 4 June 2015 - Paper 1 (Non-Calc	ulator) Higher Tier
25.	
8 (a) Simplify $6g - 5h - 4g + 2h$	
	(2)
(b) Factorise $y^2 - 2y$	
(c) Simplify fully $\frac{p^3 \times p^4}{p^2}$	(1)

Pearson Edexcel - Wednesday 5 November 2014 - Paper 1 (Non-Calculator) Higher Tier 26.

(Total for Question 8 is 5 marks)



24 p is inversely proportional to t .	
When $t = 4$, $p = 12$	
Find the value of p when $t = 6$	
(Tota	l for Question 24 is 3 marks)

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

28.

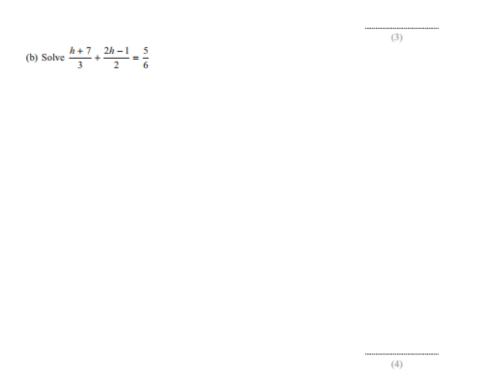
Pearson Edexcel - Wednesday 6 November 2013 - Paper 1 (Non-Calculator) Higher Tier 29.

When $x = 3$, $y = 36$	
Find the value of y when $x = 5$	
	(Total for Question 21 is 4 marks)

21 y is directly proportional to the square of x.

Pearson Edexcel - Friday 8 November 2013 - Paper 2 (Calculator) Higher Tier 30.

16 (a) Solve
$$5(f-3) = f+10$$

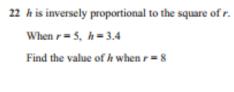


Pearson Edexcel - Tuesday 11 June 2013 - Paper 1 (Non-Calculator) Higher Tier 31.

23 Simplify
$$\frac{4(x+5)}{x^2 + 2x - 15}$$

(Total for Question 16 is 7 marks)

Pearson Edexcel - Friday 14 June 2013 - Paper 2 (Calculator) Higher Tier 32.



h =

(Total for Question 22 is 3 marks)

Pearson Edexcel - Monday 6 June 2011 - Paper 3 (Non-Calculator) Higher Tier 33.

22. (a) Find the value of $27^{-\frac{2}{3}}$



(b) Given that

$$\frac{8-\sqrt{18}}{\sqrt{2}} = a+b\sqrt{2}$$
, where a and b are integers,

find the value of a and the value of b.

Pearson Edexcel - Friday 12 November 2010 - Paper 4 (Calculator) Higher Tier 34.

25. (a) Expand and simplify (2x + 4y)(4x - 5y)

(2)

(b) Simplify fully $\frac{(x+10)^5}{(x+10)^4}$

(1)

(c) Simplify fully $\frac{x^2 - 25}{x^2 + 7x + 10}$

.....

For all values of x, $x^2 + 6x - 2 = (x + p)^2 + q$

(d) Find the value of p and the value of q.

(Total 8 marks)

Pearson Edexcel - Thursday 5 November 2009 - Paper 3 (Non-Calculator) Higher Tier 35.

	Give your answer in its simplest form.
	(Total 2 marks)
OCF	R GSCE – Monday 9 November 2020 – Paper 6 (Calculator) Higher Tier
36.	
10	Write 0.416 as a fraction in its simplest form.
10	You must show full working in support of your answer.
	Tod mast show fall working in support of your answer.
	[3]

21. Work out $(2 + \sqrt{3})(2 - \sqrt{3})$

OCR GSCE – Thursday 7 June 2018 – Paper 5 (Non - Calculator) Higher Tier 37.

1	(a)	Calculate.
		$\frac{3}{5} + \frac{5}{8}$
		Give your answer as a mixed number in its simplest form.
		(a)[3]
	(b)	Work out.
		$5 \times 10^4 - 1.6 \times 10^3$
		Give your answer in standard form.
		(b)[3]

AQA GSCE – Thursday 4 June 2020 – Paper 2 (Calculator) Higher Tier 38.

1 Which of these is a correct identity? Circle your answer.

[1 mark]

$$x + 4x \equiv 5x$$
 $6x \equiv 18$ $2x + 1 \equiv 7$ $7x + 9 \equiv x$

$$6x = 18$$

$$2x + 1 = 7$$

$$7x+9=x$$

AQA GSCE – Tuesday 21 May 2019 – Paper 1 (Non - Calculator) Higher Tier 39.

4 Circle the fraction that is equivalent to 4.625

[1 mark]

$$\frac{37}{8}$$

$$\frac{17}{4}$$

AQA GSCE – Tuesday 21 May 2019 – Paper 1 (Non - Calculator) Higher Tier 40.

Circle the fraction that is equivalent to 0.1 19

[1 mark]