

INDICES

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

1.

1 Work out the value of $\frac{3^7 \times 3^{-2}}{3^3}$

(Total for Question 1 is 2 marks)

Pearson Edexcel - Thursday 7 June 2018 - Paper 2 (Calculator) Higher Tier

2.

1 (a) Simplify $m^3 \times m^4$

(1)

(b) Simplify $(5np^3)^3$

(2)

(c) Simplify $\frac{32q^9r^4}{4q^3r}$

(2)

(Total for Question 1 is 5 marks)

Pearson Edexcel - Monday 6 November 2017 - Paper 2 (Calculator) Higher Tier

3.

6 $p^3 \times p^x = p^9$

(a) Find the value of x .

$$x = \frac{\quad}{\quad} \quad (1)$$

$(7^2)^y = 7^{10}$

(b) Find the value of y .

$$y = \frac{\quad}{\quad} \quad (1)$$

$100^a \times 1000^b$ can be written in the form 10^x

(c) Show that $x = 2a + 3b$

(2)

(Total for Question 6 is 4 marks)

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

4.

18 $16^{\frac{1}{3}} \times 2^x = 8^{\frac{1}{4}}$

Work out the exact value of x .

(Total for Question 18 is 3 marks)

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

5.

15 (a) Find the value of $\sqrt[3]{8 \times 10^6}$

.....
(1)

(b) Find the value of $144^{\frac{1}{2}} \times 64^{-\frac{1}{3}}$

.....
(2)

(c) Solve $3^{2x} = \frac{1}{81}$

$x =$
(2)

(Total for Question 15 is 5 marks)

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

6.

10 (a) Write down the value of $64^{\frac{1}{2}}$

(1)

(b) Find the value of $\left(\frac{8}{125}\right)^{\frac{2}{3}}$

(2)

(Total for Question 10 is 3 marks)

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

7.

4 (a) Simplify $p^2 \times p^5$

(1)

(b) Simplify $g^6 \div g^4$

(1)

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

(1)

(d) Expand and simplify $3(m + 4) - 2(4m + 1)$

(2)

(e) Factorise $n^2 - 7n$

(1)

(Total for Question 4 is 6 marks)

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

8.

22 (a) Find the value of 2^{-3}

(1)

$5\sqrt{5}$ can be written in the form 5^k

(b) Find the value of k .

(1)

(c) Work out the value of $(\sqrt{12} - \sqrt{3})^2$

(2)

(Total for Question 22 is 4 marks)

3 $f = 3g + 7h$

(a) Work out the value of f when $g = -5$ and $h = 2$

$f = \dots\dots\dots$
(2)

(b) Factorise $3x + 6$

$\dots\dots\dots$
(1)

(c) Expand and simplify $5(y - 2) + 2(y - 3)$

$\dots\dots\dots$
(2)

(d) Simplify $m^5 \times m^3$

$\dots\dots\dots$
(1)

(e) Simplify $\frac{p^6}{p^2}$

$\dots\dots\dots$
(1)

(Total for Question 3 is 7 marks)

10 (a) Simplify $(p^3)^2$

(1)

(b) Simplify $\frac{r^4}{r^3}$

(1)

$$2^3 \times 2^n = 2^9$$

(c) Work out the value of n .

(1)

$$2x^3 = 128$$

(d) Work out the value of x .

(1)

(Total for Question 10 is 4 marks)

11 (a) Simplify $x^7 \times x^3$

_____ (1)

(b) Simplify $(m^6)^3$

_____ (1)

(c) Simplify $\frac{36af^3}{12a^5f^2}$

_____ (2)

(Total for Question 11 is 4 marks)

Pearson Edexcel - Thursday 28 February 2013 - Paper 1 (Non-Calculator) Higher Tier

12.

9 (a) Simplify $a^4 \times a^5$

_____ (1)

(b) Simplify $\frac{45e^6f^3}{5ef^2}$

_____ (2)

(c) Write down the value of $9^{\frac{1}{2}}$

_____ (1)

(Total for Question 9 is 4 marks)

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

13.

15 (a) Simplify $m^5 \div m^3$

.....
(1)

(b) Simplify $5x^4y^3 \times x^2y$

.....
(2)

.....
(Total for Question 15 is 3 marks)
.....

Pearson Edexcel - Monday 14 November 2011 - Paper 4 (Calculator) Higher Tier

14.

11. (a) Simplify $m^3 \times m^6$

.....
(1)

(b) Simplify $\frac{p^4}{p^2}$

.....
(1)

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

.....
(2)

.....
(Total 4 marks)
.....

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

15.

12. (a) Simplify

(i) $w^6 \times w^4$

.....

(ii) $h^8 + h^3$

.....
(2)

(b) Simplify completely $\frac{12xy^3}{3x^2y^3}$

.....
(2)

(Total 4 marks)

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

16.

22. (a) Simplify $p^6 \times p^4$

.....
(1)

(b) Simplify $q^5 + q^2$

.....
(1)

(c) Simplify $12lt^6 + 6lt^6$

.....
(2)

(d) Simplify $(9w^2y^6)^{\frac{1}{2}}$

.....
(2)

(e) For $x > 1$, write the following expressions in order of size.
Start with the expression with the least value.

x^0 x^2 x x^{-2} $x^{\frac{1}{2}}$

.....
(2)

(Total 8 marks)

Pearson Edexcel - Tuesday 10 November 2009 - Paper 4 (Calculator) Higher Tier

17.

15. (a) Simplify $m^3 \times m^4$

.....
(1)

(b) Simplify $p^7 + p^3$

.....
(1)

(c) Simplify $4x^2y^3 \times 3xy^2$

.....
(2)

.....
(Total 4 marks)

OCR GCSE – Thursday 7 November 2019 – Paper 5 (Non-Calculator) Higher Tier

18.

17 Show that $\sqrt[3]{a^4} \times \frac{1}{a}$ can be expressed as $a^{\frac{1}{3}}$.

[3]

19.

14 Write $(\sqrt[4]{8})^5$ as a power of 2.

..... [3]

OCR GCSE – Tuesday 21 May 2019 – Paper 4 (Calculator) Higher Tier

20.

1 Calculate.

$$\sqrt[3]{\frac{210}{10^2 + 5^2}}$$

Give your answer correct to 3 significant figures.

..... [3]

OCR GCSE – Thursday 24 May 2018 – Paper 4 (Calculator) Higher Tier

21.

2 Given that $y^{18} + y^6 = y^k$, find the value of k .

$k =$ [1]

OCR GCSE – Thursday 7 June 2018 – Paper 5 (Non - Calculator) Higher Tier

22.

12 Carol says that $64^{-\frac{1}{2}} = \frac{1}{32}$.

Explain her error and give the correct value of $64^{-\frac{1}{2}}$ in the form $\frac{p}{q}$.

.....
.....
.....
..... [3]

23.

4 (a) Show that $a^5 \times (a^3)^2$ can be expressed as a^{11} . [2]

(b) Write $\frac{1}{125} \times 25^9$ as a power of 5.

(b) [3]

AQA GCSE – Tuesday 19 May 2020 – Paper 1 (Non - Calculator) Higher Tier

24.

14 (a) $c = 2^{10} \times 3 \times 5^6$

Work out $18c$.

Give your answer as a product of prime factors in index form.

[2 marks]

Answer _____

14 (b) Work out $\sqrt[3]{\frac{2^7 \times 11^3}{2}}$

Give your answer as an integer.

[2 marks]

Answer _____

25.

20 (a) Write down the value of 7^0

[1 mark]

Answer _____

20 (b) Work out the value of $32^{-\frac{3}{5}}$

[2 marks]

Answer _____

AQA GCSE – Tuesday 21 May 2019 – Paper 1 (Non - Calculator) Higher Tier

26.

8 Work out the value of $(3^{12} \div 3^5) \div (3^2 \times 3)$ [3 marks]

Answer _____

AQA GCSE – Tuesday 21 May 2019 – Paper 1 (Non - Calculator) Higher Tier

27.

23 Simplify $8^4 \div 32^{\frac{2}{5}}$
Give your answer in the form 2^m where m is an integer. [3 marks]

Answer _____

29.

9 $\sqrt{6^2 + 8^2} = \sqrt[3]{125a^3}$

Work out the value of a .

[4 marks]

Answer _____

32.

24 (a) Work out the value of $2^{14} + (2^9)^2$

Give your answer as a fraction in its simplest form.

[3 marks]

Answer _____

24 (b) Work out the value of $25^{\frac{3}{2}}$

[2 marks]

Answer _____

AQA GCSE – Thursday 2 November 2017 – Paper 1 (Non - Calculator) Higher Tier

33.

6 Work out the value of $(\sqrt{3})^2 \times (\sqrt{2})^2$

[2 marks]

Answer _____

AQA GCSE – Thursday 2 November 2017 – Paper 1 (Non - Calculator) Higher Tier

34.

30 (a) Work out the value of $81^{-\frac{1}{4}}$

[2 marks]

Answer _____

30 (b) Write 16×8^{2x} as a power of 2 in terms of x .

[3 marks]

Answer _____

24 (a) Work out $\sqrt{12\frac{1}{4}}$ as an improper fraction.

[1 mark]

Answer _____

24 (b) Work out $\sqrt[3]{16}$ as a power of 2

[2 marks]

Answer _____