Questions

Q1.

(a) Work out $\frac{2}{5} + \frac{1}{4}$

.....

(2)

(b) Write down the value of 2^{-3}

.....

(1)

(Total for question = 3 marks)

(**Q22 1MA1/1F, Nov 2017**)

Q2.

(a) Work out an estimate for the value of $\sqrt{63.5 \times 101.7}$

.....

(2)

$(2.3)^6 = 148$ correct to 3 significant figures.

(b) Find the value of $(0.23)^6$ correct to 3 significant figures.

.....

(1)

(c) Find the value of 5^{-2}

.....

(1)

(Total for question = 4 marks)

(**Q08 1MA1/1H, June 2019**)

Q3.

(i) Find the value of $\sqrt[5]{3.2 \times 10^{11}}$

.....

(ii) Find the value of $10^{\frac{3}{4}}$

Give your answer correct to 1 decimal place.

.....

(Total for question = 2 marks)

(**Q16 1MA1/2H/S2, Specimen papers**)

Q4.

Work out $(-3)^3$

.....

(Total for question is 1 mark)

(**Q05 1MA1/1F/S1, Specimen papers**)

Q5.

Find the value of $(2.8 - 0.45)^2 + \sqrt[3]{5.832}$

.....

(Total for question = 2 marks)

(**Q04 1MA1/2F/N, Specimen papers**)

Q6.

(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 = 5 marks)

(**Q15 1MA1/1H/S2, Specimen papers**)

Q7.

Find the value of 5^4

.....

(Total for question = 1 mark)

(**Q04 1MA1/2F/S2, Specimen papers**)

Q8.

The same number is missing from each box.

$\square \times \square \times \square = 343$

(a) Find the missing number.

.....

(1)

(b) Work out 4^4

.....

(1)

(Total for question is 2 marks)

(**Q11 1MA1/3F/S1, Specimen papers**)

Q9.

(a) Work out $84 \div 3$

.....

(1)

(b) Work out 0.17×6000

.....

(1)

(c) Work out $(-2)^3$

.....

(1)

(Total for question = 3 marks)

(**Q03 1MA1/1F/S2, Specimen papers**)

Q10.

Here is a list of numbers

4 7 9 25 27 31 64

From the numbers in the list, write down a cube number.

.....

(Total for question = 1 mark)

(**Q03 1MA1/2F/N, Specimen papers**)

Q11.

Work out 1.7^3

.....

(Total for question = 1 mark)

(**Q01 1MA1/2F/M1, Specimen papers**)

Q12.

(a) Find the value of $\sqrt[3]{97.336}$

.....

(1)

(b) Find the value of $\sqrt{7.29} + (2.3 - 0.85)^2$

.....

(2)

(Total for question = 3 marks)

(Q09 1MA1/3F/S2, Specimen papers)

Q13.

(a) Find the value of $\sqrt[4]{27 \times 3 \times 10^8}$

.....

(2)

(b) Find the value of $\left(\frac{216}{1000}\right)^{-\frac{2}{3}}$

.....

(2)

(Total for question = 4 marks)

(Q15 1MA1/1H/M2, Specimen papers)

Q14.

(a) Work out $\frac{4}{5}$ of 210 cm.

..... cm

(1)

(b) Work out $(6 - 2.5)^2 + \sqrt{9.34 - 2.58}$

.....

(2)

(Total for question is 3 marks)

(**Q15 1MA1/2F/S1, Specimen papers**)

Q15.

(a) Find the value of $\sqrt{1.44 \times 3.61}$

.....

(1)

(b) Find the value of $(3.54 - 0.96)^2 - 4.096$

.....

(2)

(Total for question = 3 marks)

(**Q08 1MA1/3F, June 2018**)

Q16.

(a) Work out $-12 \div -4$

.....

(1)

(b) Find the value of 2^5

.....

(1)

(c) Write **one** pair of brackets in this calculation so that the answer is correct.

$$30 \div 3 + 2 - 4 = 2$$

(1)

(Total for question = 3 marks)

(**Q11 1MA1/1F, June 2024**)

Q17.

Here is a list of numbers.

10 16 21 28 43

One of these numbers is a power of 2

Which number?

.....

(Total for question = 1 mark)

(**Q02 1MA1/2F/M3, Specimen papers**)

Q18.

Write down the value of 7^2

.....

(Total for question = 1 mark)

(**Q05 1MA1/1F, Nov 2021**)

Q19.

Here is a list of whole numbers from 21 to 30

21 22 23 24 25 26 27 28 29 30

(a) From the list, write down a square number.

.....

(1)

(b) From the list, write down a multiple of 8

.....

(1)

(Total for question = 2 marks)

(**Q06 1MA1/2F, Nov 2021**)

Q20.

Here are two numbers.

29 37

Nadia says both of these numbers can be written as the **sum** of two square numbers.

Is Nadia correct?
You must show how you get your answer.

(Total for question is 3 marks)

(**Q12 1MA1/3F/S1, Specimen papers**)

Q21.

Work out the value of 2^4

.....

(Total for question = 1 mark)

(**Q01 1MA1/1F, June 2017**)

Q22.

Find the value of 6^5

.....

(Total for question = 1 mark)

(**Q05 1MA1/2F, Nov 2019**)

Q23.

Here is a list of numbers.

11 15 22 37 49 63 75

From the numbers in the list,

(a) write down an even number

.....

(1)

(b) write down a multiple of 9

.....

(1)

(c) write down a square number.

.....

(1)

(Total for question = 3 marks)

(**Q06 1MA1/2F/M3, Specimen papers**)

Q24.

(a) Find the reciprocal of 5

.....

(1)

(b) Use your calculator to work out $\sqrt[3]{5\tan 60° + 1}$
Write down all the figures on your calculator display.

.....

(2)

(Total for question = 3 marks)

(**Q07 1MA1/2H/M3, Specimen papers**)

Q25.

Find the value of $\sqrt{17.64}$

.....

(Total for question = 1 mark)

(**Q04 1MA1/2F, Nov 2019**)

Q26.

Write down a square number that is also an odd number.

.....

(Total for question = 1 mark)

(**Q02 1MA1/2F, Nov 2018**)

Q27.

Work out the cube root of 64

.....

(Total for question = 1 mark)

(**Q04 1MA1/2F, Nov 2018**)

Q28.

Find $\sqrt{1.44}$

.....

(Total for question = 1 mark)

(**Q03 1MA1/3F, Nov 2018**)

Q29.

(a) Write down the value of $\sqrt{64}$

.....

(1)

(b) Work out the value of 5^3

.....

(1)

(Total for question = 2 marks)

(**Q15 1MA1/1F, June 2019**)

Q30.

Here is a list of numbers.

4 6 9 10 15 27 30 40

From the list, write down all the numbers that are powers of 3

(Total for question = 1 mark)

(**Q04 1MA1/3F, June 2019**)

Q31.

Work out 2.5^2

.....

(Total for question = 1 mark)

(**Q04 1MA1/3F, Nov 2020**)

Q32.

Here is a list of numbers.

3 4 9 18 27 30 36

From the numbers in the list, write down a cube number.

.....

(Total for question = 1 mark)

(**Q05 1MA1/2F, Nov 2020**)

Q33.

Find $\sqrt{1.69}$

.....

(Total for question = 1 mark)

(**Q05 1MA1/3F, June 2022**)

Q34.

Work out 3^2

.....

(Total for question = 1 mark)

(**Q02 1MA1/1F, Nov 2022**)

Q35.

Write down a square number that is between 10 and 50

.....

(Total for question = 1 mark)

(**Q04 1MA1/2F, Nov 2023**)

Q36.

Find the square root of 64

.....

(Total for question = 1 mark)

(**Q05 1MA1/1F, June 2024**)

Q37.

Junaid says that 20 is a square number because $10^2 = 20$

(a) Is Junaid correct?

Give a reason for your answer.

.....

.....

.....

(1)

Chloe says,

"When you divide an even number by an even number the answer is always an even number."

(b) Write down an example to show that Chloe is wrong.

.....

.....

.....

(1)

(Total for question = 2 marks)

(**Q08 1MA1/2F, Nov 2024**)

Q38.

Find the value of $\sqrt{2.25}$

.....

(Total for question = 1 mark)

(**Q05 1MA1/3F, Nov 2024**)

Q39.

(a) Express $\sqrt{\frac{10^{360}}{10^{150} \times 10^{90}}}$ as a power of 10

.....

(3)

Liam was asked to express $(12^{50})^2$ as a power of 12

Liam wrote $(12^{50})^2 = 12^{502} = 12^{2500}$

Liam's method is wrong.

(b) Explain why.

.....

.....

.....

(1)

(Total for question = 4 marks)

(**Q09 1MA1/3H, June 2022**)

Q40.

(a) Find the value of $\sqrt[4]{81 \times 10^8}$

.....

(2)

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

.....

(2)

(c) Write $\frac{3^n}{9^{n-1}}$ as a power of 3

.....

(2)

(Total for question = 6 marks)

(**Q11 1MA1/1H, Nov 2020**)

Q41.

Nidah writes down two different prime numbers.

She adds together her two numbers.
Her answer is a square number less than 30

Find two prime numbers that Nidah could have written down.

..... , ...

(Total for question = 2 marks)

(**Q09 1MA1/3F, Nov 2017**)

Q42.

Prove that the square of an odd number is always 1 more than a multiple of 4

(Total for question = 4 marks)

(**Q12 1MA1/1H, June 2018**)

Q43.

Work out the value of 3^5

.....

(Total for question = 1 mark)

(**Q03 1MA1/2F, June 2018**)

Q44.

Write down an even cube number.

.....

(Total for question = 1 mark)

(**Q02 1MA1/2F/M2, Specimen papers**)

Q45.

Here is a list of five numbers.

14 15 16 17 18

From the list,

(i) write down the prime number,

.....

(ii) write down the square number.

.....

(Total for question = 2 marks)

(**Q11 1MA1/3F/N, Specimen papers**)