Name: _____

GCSE (1 – 9)

Powers and Roots

Instructions

- Use **black** ink or ball-point pen.
- Answer all questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

Information

- The marks for each question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end

1 Work out 2^3

........8........

(Total for Question 1 is 1 mark)

2 Work out the cube root of 64

........4........

(Total for Question 2 is 1 mark)

3 Write down the value of $\sqrt{49}$

........7........

(Total for Question 3 is 1 mark)

4 Write down the value of 3^2

........9........

(Total for Question 4 is 1 mark)

5 Write down a square number that is also an even number.

ANY OF

4, 16, 36, 64, 100, 144...

........4........

(Total for Question 5 is 1 mark)

6 Write down the value of 5^2

........25........

(Total for Question 6 is 1 mark)

7 Work out 10^4

........10 000........

(Total for Question 7 is 1 mark)

8 Write down the value of $\sqrt{36}$

........6........

(Total for Question 8 is 1 mark)

9 Work out 2^4

16

(Total for Question 9 is 1 mark)

10 Work out the cube root of 27

3

(Total for Question 10 is 1 mark)

11 Write down the value of $\sqrt{81}$

9

(Total for Question 11 is 1 mark)

12 Write down the value of 4^2

16

(Total for Question 12 is 1 mark)

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

1, 9, 25, 49, 81, 121...

25

(Total for Question 13 is 1 mark)

14 Work out 5^3

125

(Total for Question 14 is 1 mark)

15 Write down the value of 8^2

64

(Total for Question 15 is 1 mark)

16 Work out the value of 5×10^3

5000

(Total for Question 16 is 1 mark)

17 Here is a list of numbers

2^2 2^3 2^4

4   6   8   11   12   15   16   25

From the list, write down all the numbers that are powers of 2.

4, 8 and 16

(Total for Question 17 is 1 mark)

18 Write $5 \times 5 \times 5 \times 5$ as a power of 5

5^4

(Total for Question 18 is 1 mark)

19 Here is a list of numbers

5   9   11   16   20   25   32   38

3^2 4^2 5^2

From the list, write down all the square numbers.

9, 16 and 25

(Total for Question 19 is 1 mark)

20 Here is a list of numbers

3^3 4^3

6   12   15   21   27   36   64   80

From the list, write down all the cube numbers.

27 and 64

(Total for Question 20 is 1 mark)