



**Bishops
Online
Tutoring**



Education Consultancy

Edexcel GCSE Mathematics

POWERS & SQUAREROOTS

Materials Required:

- Pen
- HB Pencil
- Ruler (in centimetres and millimetres)
- Protractor
- Compass

Instructions:

- Use a black ink pen to answer all questions
- Fill your name in the section below
- Answer the questions in the spaces provided
- Show your working out for all answers

Information:

- The marks allocated for each question are displayed within brackets – utilise this information to gauge the appropriate amount of time to dedicate to each question
- Questions marked with an asterisk (*) will assess your written communication; be careful of spelling, punctuation and grammar with these questions

Advice:

- Carefully read the question before attempting to answer it
- Be vary of time and try to answer every question
- If you have enough time in the end, go back and check your answers. A good way to check your answers is to retry the question with the hope of getting the same answer as before without looking at your working out from before

NO CALCULATOR ALLOWED

NAME:

1. Write down the value of

(i) $2^3 = 2 \times 2 \times 2$
 $= 8$

.....8

(ii) $\sqrt{81} = ? \times ? = 81$

$9 \times 9 = 81$

.....9

(Total 2 marks)

2. (a) Work out the square of 3

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

.....9

(1)

(b) Work out the value of 2^6

$2 \times 2 \times 2 \times 2 \times 2 \times 2$
 $\begin{matrix} 1 & 1 & 1 & 1 & 1 \\ 4 & - & 8 & - & 16 & - & 32 & - & 64 \end{matrix}$

.....64

(1)

(Total 2 marks)

3. (a) Work out the value of

(i) $4^2 = 4 \times 4$
 $= 16$

.....16.....

(ii) $5^3 = 5 \times 5 \times 5$
 $= 125$

.....125.....

(2)

(b) Write as a power of 10

$$10 \times 10 \times 10 \times 10 \times 10$$

.....100000.....

(1)

(Total 3 marks)

4. Find the value of

(i) the square root of 36

$$\sqrt{36} = 6$$

.....6.....

(ii) 5×10^2

$$10^2 = 100$$

$$5 \times 100 = 500$$

.....500.....

(iii) $2^3 = 2 \times 2 \times 2$
 $= 8$

.....8.....

(Total 3 marks)

5. (a) Find the square of 6

$$6^2 = 6 \times 6$$
$$= 36$$

.....36.....

(1)

- (b) Find the square root of 225

$$15 \times 15$$
$$= 225$$

.....15.....

(1)

- (c) Find the value of 10^3

$$10 \times 10 \times 10$$
$$= 1000$$

.....1000.....

(1)

(Total 3 marks)

6. Write down the value of

(i) $3^3 = 3 \times 3 \times 3$

$$= 27$$

.....27.....

(ii) $\sqrt{81}$

$$9 \times 9 = 81$$

.....9.....

(Total 2 marks)

7. (a) Work out the square of 8

$$8^2 = 8 \times 8$$
$$= 64$$

.....64

(1)

- (b) Work out the value of 5^3

$$5 \times 5 \times 5$$
$$= 125$$

.....125

(1)

(Total 2 marks)

8. (a) Work out the value of

(i) $7^2 = 7 \times 7$

$$= 49$$

.....49

(ii) $2^4 = 2 \times 2 \times 2 \times 2$

$$= 16$$

.....16

(2)

- (b) Write as a power of 10

$$10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10$$
$$1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7$$

$$\therefore 10^7$$

.....10⁷

(1)

(Total 3 marks)

9. Find the value of

(i) the square root of 25

$$5 \times 5 = 25$$

.....5.....

(ii) 3×10^4

$$10^4 = 10000$$

$$3 \times 10000 = 30000$$

.....30000.....

(iii) $4^3 = 4 \times 4 \times 4$
 $= 64$

.....64.....

(Total 3 marks)

10. (a) Find the square of 7

$$7^2 = 7 \times 7$$
$$= 49$$

.....49.....

(1)

(b) Find the square root of 196

$$14 \times 14 = 196$$

.....14.....

(1)

(c) Find the value of 10^5

$$10 \times 10 \times 10 \times 10 \times 10$$
$$= 100000$$

.....100000.....

(1)

(Total 3 marks)

WORK OUT THE FOLLOWING:

1^2	1	9^2	81
2^2	4	10^2	100
3^2	9	11^2	121
4^2	16	12^2	144
5^2	25	13^2	169
6^2	36	14^2	196
7^2	49	15^2	225
8^2	64	16^2	256