

## Non-Calculator

Q1.

(a) Circle the value of 24

6                      8                      16                      24

(b) Circle the value of 53

15                      25                      53                      125

(c) Circle the value of  $\sqrt{196}$

13                      14                      16                      98

(1)

(1)

(1)

(Total 3 marks)

Q2.

Complete this table.

30	31	32	33	$3^4$	35	36	37
1	3	9			243	729	2187

(Total 2 marks)

Q3.

Work out the value of  $(\sqrt{5})^2$   $(\sqrt{6})^2$   $(\sqrt{7})^2$ . You must show your working.

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Answer \_\_\_\_\_

(Total 1 mark)

Q4.

Simplify  $3^4 \times 3^4$

Circle the answer.

$3^8$

$9^8$

$3^{16}$

$9^{16}$

(Total 1 mark)

Q5.

Work out  $\sqrt{2^6 + 6^2}$

Circle your answer.

10

14

50

100

(Total 1 mark)

### Calculator

Q6.

Circle the value of 25

10

25

32

64

(Total 1 mark)

Q7.

Circle the cube number.

3

8

9

16

(Total 1 mark)

Q8.

Work out  $5^{12} \div 5^3 \times 5^2$  as a power of 5

Circle your answer.

56

58

59

$5^{11}$

(Total 1 mark)

Q9.

Show that 268 can be written as the sum of a power of 3 and a square number.

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Answer \_\_\_\_\_

(Total 2 marks)

Q10.

Show that there are exactly five 3-digit cube numbers.

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(Total 3 marks)

Q11.

(a) Work out the value of  $7^3$

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Answer \_\_\_\_\_

(1)

(b) The sum of two consecutive cube numbers is 341.

Work out the two numbers.

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Answer \_\_\_\_\_ and \_\_\_\_\_

(2)

(Total 3 marks)

Q12.

Work out 81 as a power of 3

Circle your answer.

33

34

35

36

(Total 1 mark)

Q13.

Work out the square root of 100 million.

Circle your answer.

1000

10 000

100 000

1 000 000

(Total 1 mark)

Q14.

Use your calculator to work out

(a)  $\sqrt{576}$

Answer \_\_\_\_\_ (1)

(b)  $2.32 + \sqrt{5}$

Answer \_\_\_\_\_ (1)

(c)  $\frac{1}{0.4^2}$

Answer \_\_\_\_\_ (1)

(Total 3 marks)

Q15.

- (a) Circle the number that is an integer power of 4

2

8

16

32

(1)

- (b) Work out  $512 \div 53 \times 52$  as a power of 5  
Circle your answer.

56

58

59

$5^{11}$

(1)

(Total 2 marks)

Q16.

Which of these is a cube number?

Circle your answer.

3

9

27

100

(Total 1 mark)