

## Powers and Roots Exam Practice



### Squares, Cubes

Q1. Write down the square root of 36

Answer: \_\_\_\_\_  
(1 mark)

Q2. Write down the square root of 121

Answer: \_\_\_\_\_  
(1 mark)

Q3. Work out the value of  $4^3$

Answer: \_\_\_\_\_  
(1 mark)



Q4. Work out the value of  $7^3$

Answer: \_\_\_\_\_  
(1 mark)

Q5. Write down the cube root of 27

Answer: \_\_\_\_\_  
(1 mark)

Q6. Find the cube root of 8000

Answer: \_\_\_\_\_  
(1 mark)



Q7. Write down all the square numbers from this list:

1, 4, 8, 12, 16, 20, 32, 36, 49, 66, 144, 160

Answer: \_\_\_\_\_  
(2 marks)

Q8. Write down all the cube numbers from this list:

1, 4, 24, 36, 64, 120, 125, 216, 360, 512, 10000

Answer: \_\_\_\_\_  
(2 marks)



Q9. Work out the next cube number after 1000

Answer: \_\_\_\_\_  
(2 marks)

Q10. Find the next square number after 5625

Answer: \_\_\_\_\_  
(3 marks)

**Powers:**

Q11. From the list, write down all the numbers that are powers of 2.

4, 6, 8, 11, 12, 15, 16, 25, 42, 256

Answer: \_\_\_\_\_  
(2 marks)



Q12. Write  $6 \times 6 \times 6 \times 6 \times 6 \times 6$  as a power of 6

Answer: \_\_\_\_\_  
(1 mark)

Q13. Work out the value of  $9^3 \times 10^2$

Answer: \_\_\_\_\_  
(1 mark)



Q14. Fern is thinking of a number.

It is larger than 30, and a square number which is also a power of 2.

What number is Fern thinking of?

Answer: \_\_\_\_\_  
(1 mark)

Q15. Work out the value of  $400 \times 10^4 \times 25 \times 10^3$ , giving your answer as a power of 10.

Answer: \_\_\_\_\_  
(2 marks)



Q16. A colony of ants doubles in population every 5 days.

If there were 2 ants on the first of January, how many ants would there be on January 7<sup>th</sup>?

Answer: \_\_\_\_\_  
(2 marks)

Q17. Given that  $3^4 \times 312 = 25272$ , work out the value of  $3^5 \times 312$

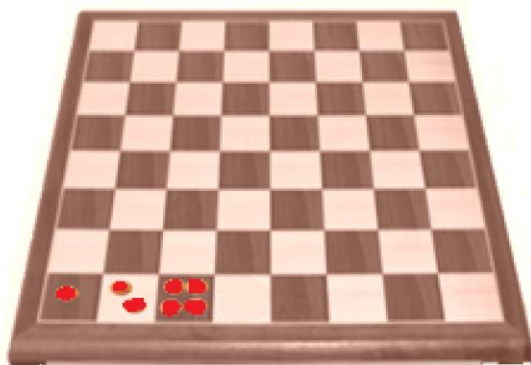
Answer: \_\_\_\_\_  
(2 marks)



Q18. Given that  $2^{12} = 4096$ , write 8192 as a power of 2.

Answer: \_\_\_\_\_  
(2 marks)

Q19. Here is a chess board.



Jane puts 1 counter on the first square of the chess board, then 2 counters on the second, 4 on the third and so on.

Work out how many counters there will be in total after she has covered the first row of the board.

Answer: \_\_\_\_\_  
(3 marks)