

A. Case Study

Rishita wrote a number 262144. Mita told that it is both perfect square and perfect cube.

Q.1. How many digits are there in the square root of the number?

(a) 2 (b) 3 (c) 4 (d) cannot be determined

Q.2. How many digits are there in the cube root of the number?

(a) 2 (b) 3 (c) 4 (d) cannot be determined

Q.3. The square root and cube root of the number are respectively –

(a) 312, 64 (b) 216, 36 (c) 512, 64 (d) 128, 34

Q.4. The standard form of the number is-

(a) 2.62144×10^{-5} (b) 2.62144×10^5 (c) 26.2144×10^4 (d) 26.2144×10^{-4}

Q.5. If one side of a square is $(x+13^2)$ and the area of the square is the given number, then find the value of x and its cube roots if possible.

B. Case Study

Bacteria can divide every 15 minutes. So one bacterium can multiply to 2 in 30 minutes, 4 in 45 minutes and so on.

Q. 1. How many bacteria will be there in 4 hours.

(a) 65536 (b) 327680 (c) 131072 (d) 262144

Q. 2. How many bacteria will be there in 1 hour?

(a) 2^2 (b) 2^4 (c) 2^6 (d) 2^8

Q.3. In what time, 4^{100} bacteria will be there ?

(a) 100 hours (b) 50 hours (c) 25 hours (d) 200 hours

Q.4. In what time, 8^5 bacteria will be there ?

(a) 1 hr 15 mins (b) 3 hours (c) 3 hrs 45 mins (d) 225 hours

C. Case Study

Jagjith Singh has a road map with a scale of 2.5 cm=50 km.

Based on the above information, answer the following questions:

Q.1. He drives on a road for 72 km. What would be his distance covered in the map?

Q.2. Suppose the distance between two places on the map is 3.5cm, find the exact distance between the two places.

Q.3. Jagjith Singh went from place a to b to meet his parents and then b to c to join his office. If the distance between a and b is 4cm, the distance between b and c is 2 cm on the map, total how much distance is covered by Jagjith Singh.

Q.4. Write the condition when x and y are in inverse proportion. [y_1, y_2 are values of y corresponding to the values x_1, x_2 of x respectively]

