74. Square Numbers and Cube Numbers

Practice Questions:

1. Write down all the square numbers between 10 and 50.

2. What is the largest square number under 100?

3. Find two square numbers with a difference of 5.

4. Find two square numbers which add together to make another square number.

5. Explain why 20 isn't a square number.

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Practice Questions:

6. Write down 5 cube numbers.

7. Explain why 64 is a cube number.

8. What is the first four digit cube number?

9. Write down two cube numbers which add together to make a square number.

10. Write down the largest odd cube number under 100.

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Scenario Questions:

1. A square window has an area of 49 cm². What is the length of one side?

2. A crate holds 27 identical boxes, arranged in a cube. How many boxes are along one edge?

3. A square field covers 81 m². How long is each side?

4. A box is a cube with a volume of 125 cm³. How long is one edge?

5. A rug is 8 metres on each side. What is its area in square metres?

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Scenario Questions:

6. A cube has a volume of 64 cm³. How long is one edge?

7. A pile of 1000 identical small cubes is arranged to form a larger cube. How many small cubes are along one edge?

8. A storage box is shaped like a cube. Each edge measures 9 cm. What is the volume of the box?

9. A cube has a volume of 216 cm³. James says the side length must be 72 cm because you just divide the volume by 3. Is James correct? Explain your answer.

10. Suzi has two cubes. One has a side length 3 cm, and the other 6 cm. Suzi thinks that as 6 cm is twice as long as 3 cm, the larger cube will have twice the volume. Is Suzi correct? Show your working.

ANSWERS

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Practice Questions:

1. 16, 25, 36, 49
2. 81
3. 4 and 9
4. 9 and 16
5. $\sqrt{20}$ does not give a whole value
6. 1, 8, 27, 64, 125, 1000 (any 5)
7. $4^3 = 64$
8. 1000
9. 1 and 8
10. 27

Scenario Questions:

1. 7 cm
2. 3 boxes
3. 12 m
4. 5 cm
5. 64 m^2
6. 4 cm
7. 10 cubes
8. 125 cm^3
9. No, should have used cube root
10. No, 8 cm^3 vs 64 cm^3. More than twice