73. Powers and Roots

Practice Questions:

1. $2^5 + 3^2$

2. $\sqrt{64} + \sqrt{49}$

3. $5^2 - 4^2$

4. $\sqrt{81} \times \sqrt{16}$

5. $6^2 + 2^3$

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Practice Questions:

6. $\sqrt{20} + \sqrt{45}$ (round your answer to 2 decimal places)

7. $10^2 \div 2^3$

8. $\sqrt{50} + \sqrt{32}$ (round your answer to 1 decimal place)

9. $3^3 + \sqrt{100}$

10. $2^4 \times \sqrt{36}$

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Scenario Questions:

1. You invest £500 in a savings account with 5% interest each year. To increase the amount by 5%, you multiply by 1.05. What would you multiply £500 by to find the amount after 2 years?

2. A square patio has an area of 36 m². What number multiplied by itself equals 36? Use a square root to find the length of one side.

3. A population of bacteria doubles every hour. You start with 200 bacteria. To double a number, you multiply by 2. What would you multiply by to find the amount after 3 hours?

4. A cube-shaped water tank holds 1,000 litres. What number multiplied by itself 3 times equals 1,000? Use a cube root to find the length of one side of the tank.

5. You borrow £800 at 10% interest each year, compounded. To increase by 10%, you multiply by 1.10. What would you multiply by to find the total after 3 years?

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Scenario Questions:

6. A square wall has an area of 50 m². What is the square root of 50? Use this to estimate the length of one side. (Round to 1 decimal place)

7. A cube has a volume of 27 cm³. Use the cube root to find the edge length.

8. A phone battery loses 20% of its charge each year. To reduce by 20%, you multiply by 0.8. What would you multiply by to find the battery life after 2 years?

9. A square carpet covers 81 m². What number squared gives 81? Use a square root to find the width of the carpet.

10. A cube-shaped box has a volume of 200 cm³. Use this to find the length of one side. Give you answer to 1 decimal place.

ANSWERS

Topic 73. Powers and Roots

Practice Questions:

1. 41
2. 15
3. 9
4. 36
5. 44

6. 11.18 (to 2 dp)
7. 12.5
8. 12.7 (to 1 dp)
9. 37
10. 96

Scenario Questions:

1. 1.1025
2. 6 m
3. 8
4. 10
5. 1.331

6. 7.1 (to 1 dp)
7. 3
8. 0.64
9. 9
10. 5.8 (to 1dp)