Square numbers and square roots

6 questions | 13 marks

Equivalent correct methods earn the corresponding marks.

1. Calculate 8^2. [2 marks]

Square means multiply by itself: $8 \times 8 = 64$.

Answer: 64

2. Find $\sqrt{121}$. [2 marks]

$11 \times 11 = 121$.

Therefore the principal square root is 11.

Answer: 11

3. A square display uses 81 tiles with the same number of tiles in each row and column. How many tiles are in one row? [2 marks]

Let the number in a row be n.

The square has $n^2 = 81$ tiles, so $n = 9$.

Answer: 9

4. Between which two consecutive whole numbers is $\sqrt{50}$? [2 marks]

$7^2 = 49$ and $8^2 = 64$.

Because 50 lies between them, its root lies between 7 and 8.

Answer: 7 and 8

5. Evaluate $3^2 + 4^2$. [2 marks]

$3^2 = 9$ and $4^2 = 16$.

$9 + 16 = 25$.

Answer: 25

6. A student says $\sqrt{9 + 16} = 7$. Explain the error and give the correct value. [3 marks]

Add inside the root first: $9 + 16 = 25$.

$\sqrt{25} = 5$.

Square roots do not generally distribute over addition.

Answer: The correct value is 5.