Calculations in practical contexts using suitable digital tools

6 questions | 14 marks

Equivalent correct methods earn the corresponding marks.

1. A square court has area $625\ \text{m}^2$. Find its side and check. [2 marks]

$\sqrt{625} = 25$ and $25^2 = 625$.

Answer: $25\ \text{m}$.

2. A square plot has area $730\ \text{m}^2$. Find its side to two decimal places. [2 marks]

$s = \sqrt{730} = 27.018512\ldots\ \text{m}$.

Answer: $27.02\ \text{m}$.

3. Use $r = \frac{C}{2\pi}$ to find the radius for circumference $48\ \text{cm}$. Give two decimal places. [2 marks]

$r = \frac{48}{2\pi} = 7.639437\ldots\ \text{cm}$.

Answer: $7.64\ \text{cm}$.

4. A supplied formula is $D = \sqrt{a^2 + b^2}$. For $a = 8.4\ \text{cm}$ and $b = 12.5\ \text{cm}$ find D to one decimal place. [2 marks]

$D = \sqrt{70.56 + 156.25} = \sqrt{226.81} = 15.060212\ldots\ \text{cm}$.

Answer: $15.1\ \text{cm}$.

5. A square of area $50\ \text{m}^2$ needs edging along all four sides. It is sold in whole metres. Find the least length to buy. [3 marks]

Length $= 4\sqrt{50} = 28.284271\ldots\ \text{m}$.

Round up; twenty-eight metres is too short.

Answer: $29\ \text{m}$.

6. A student reports $\sqrt{360} = 189.7$. Explain a quick check and give the correct value to one decimal place. [3 marks]

$18^2 = 324 < 360 < 361 = 19^2$.

$\sqrt{360} = 18.973665\ldots$.

Answer: The root is between 18 and 19; it rounds to 19.0.