Worked answers | Real numbers

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 m^2. Find its side and check. [2 marks]

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

Answer: 25 m.

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

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

Answer: 27.02 m.

3. Use $r = C/(2\pi)$ to find the radius for circumference 48 cm. Give two decimal places. [2 marks]

$r = 48/(2\pi) = 7.639437\ldots$ cm.

Answer: 7.64 cm.

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

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

Answer: 15.1 cm.

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

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

Round up; twenty-eight metres is too short.

Answer: 29 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.