

Chapter 10 — Squares, Square Roots, and Estimation

Worksheet C: Mixed Application

Name: _____ Grade: _____ Date: _____

1. A student says $\sqrt{36} = 18$ because $36 \div 2 = 18$. Explain the mistake and find the correct value.

2. A student says $\sqrt{270} = 15$ because $15 \times 18 = 270$. Explain the mistake and estimate the root correctly.

3. Explain why $\sqrt{1024} = 32$, but $x^2 = 1024$ has two solutions.

4. Estimate: $\sqrt{112}$

5. Estimate: $\sqrt{148}$

6. Which is larger: $\sqrt{220}$ or 15?

7. Which is larger: 18 or $\sqrt{340}$?

8. A square garden has area 1089 m^2 . Find the side length.

9. A square tile has area 1156 cm^2 . Find the side length.

10. Explain why $\sqrt{150}$ cannot be 75.

11. Order from least to greatest: $\sqrt{48}$, 8, $\sqrt{12}$, $\sqrt{28}$

12. Order from least to greatest: $\sqrt{375}$, $\sqrt{265}$, $\sqrt{335}$, $\sqrt{300}$

13. A square has perimeter 116 cm. Find its area.

- 14. Non-Routine:** Choose a number between 225 and 256 that has not appeared earlier. Estimate its square root and explain the interval.

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- 15. Non-Routine:** Create a square whose area is a perfect square between 900 and 1156 that has not appeared earlier. State the area and find the side length.