

Estimating Square Roots

Name: _____

Date: _____

Remember: Perfect squares are: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144...

To estimate a square root, find the two perfect squares it falls between.

Example: $\sqrt{20}$ is between $\sqrt{16}$ and $\sqrt{25}$, so $\sqrt{20}$ is between 4 and 5.

Part A: Between Which Two Whole Numbers?

Write the two consecutive whole numbers that each square root falls between.

1. $\sqrt{8}$ _____ $< \sqrt{8} <$ _____
2. $\sqrt{30}$ _____ $< \sqrt{30} <$ _____
3. $\sqrt{50}$ _____ $< \sqrt{50} <$ _____
4. $\sqrt{75}$ _____ $< \sqrt{75} <$ _____
5. $\sqrt{110}$ _____ $< \sqrt{110} <$ _____
6. $\sqrt{95}$ _____ $< \sqrt{95} <$ _____

Part B: Closer To Which Whole Number?

Circle whether each square root is closer to the smaller or larger whole number.

7. $\sqrt{12}$ Closer to: 3 or 4
8. $\sqrt{40}$ Closer to: 6 or 7
9. $\sqrt{60}$ Closer to: 7 or 8
10. $\sqrt{90}$ Closer to: 9 or 10

Part C: Order the Square Roots

Arrange these numbers from smallest to largest.

11. $\sqrt{15}$, 4, $\sqrt{10}$, 5
_____ $<$ _____ $<$ _____ $<$ _____
12. $\sqrt{80}$, 9, $\sqrt{70}$, 10
_____ $<$ _____ $<$ _____ $<$ _____

Part D: Challenge

13. A square has an area of 45 cm². Estimate the length of one side to the nearest whole number.

Side length $\approx$ _____ cm

14. Which is larger: $\sqrt{50}$ or 7? Explain your reasoning.
