

Homework Exercises

For more exercises, see **Extra Skills and Word Problems**.

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Find the square roots of each number.

9. 49 10. 900 11. $\frac{1}{36}$ 12. $\frac{1}{121}$ 13. $\frac{4}{25}$

Estimate the value of each expression to the nearest integer.

14. $\sqrt{3}$ 15. $\sqrt{10}$ 16. $-\sqrt{22}$ 17. $\sqrt{88}$
 18. $-\sqrt{54}$ 19. $-\sqrt{105}$ 20. $\sqrt{150}$ 21. $-\sqrt{120}$

Use $s = 20\sqrt{273 + T}$ to estimate the speed of sound s in meters per second for each Celsius temperature T . Round to the nearest integer.

22. 0°C 23. 20°C 24. -10°C 25. 70°C

Is each number *rational* or *irrational*? Explain.

26. -0.6 27. $\sqrt{40}$ 28. $0.606606660\dots$
 29. $-\sqrt{144}$ 30. $\sqrt{12}$ 31. $0.0203040506\dots$

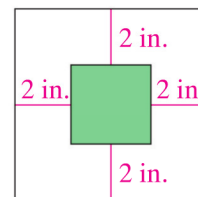


32. **Guided Problem Solving** The area of a square postage stamp is $\frac{81}{100}$ in.². What is the side length of the stamp?
- What is the formula for the area of a square?
 - How can you use the formula to find the side length of a square?



33. **Boxing** The area of a square boxing ring is 484 ft^2 . What is the perimeter of the boxing ring?

34. **Geometry** A tile is shown at the right. The area of the larger square is 49 in.^2 . Find the area of the smaller square.



35. **Open-Ended** Give an example of an irrational number that is less than 2 and greater than 1.5. Explain how you know the number is irrational.

36. **Writing in Math** Explain how you can approximate $\sqrt{30}$.

37. The Closure Property states that a set of numbers is closed under a given operation if the result of the operation is in the same set of numbers. For example, the set of rational numbers is closed under addition, because the sum of any two rational numbers is a rational number. Is each set of numbers closed under addition? Explain.
- a. even numbers b. irrational numbers c. prime numbers

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