REVIEW: Square Roots

Name _____

Key Concept and Vocabulary

A **square root** of a number p is a number whose square is equal to p. Every positive number has a positive *and* a negative square root. A **perfect square** is a number with integers as its square roots.

Positive Square Root: $\sqrt{9} = 3$

Negative Square Root: $-\sqrt{9} = -3$

Both Square Roots: $\pm\sqrt{9} = \pm 3$

Skill Examples

1. $\sqrt{36}$

Because $6^2 = 36$, $\sqrt{36} = 6$.

2. $-\sqrt{144}$

Because $12^2 = 144$, $-\sqrt{144} = -12$.

3. $\pm\sqrt{3.24}$

Because $1.8^2 = 3.24$, $\pm\sqrt{3.24} = -1.8$ and 1.8.

Application Example

4. The area of a square table top is 256 square inches. What is the length of one side of the table top?

$A = s^2$

$256 = s^2$

$\sqrt{256} = \sqrt{s^2}$

$16 = s$

The length of one side of the table top is 16 inches.

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Find the square root(s).

5. $-\sqrt{64} =$ -8

6. $\sqrt{121} =$ 11

7. $\pm\sqrt{625} =$ ± 25

8. $\sqrt{4} =$ 2

9. $\pm\sqrt{289} =$ ± 17

10. $-\sqrt{196} =$ -14

11. $\sqrt{0.25} =$ 0.5

12. $-\sqrt{1.69} =$ -1.3

13. $\pm\sqrt{\frac{16}{49}} =$ $\pm\frac{4}{7}$

14. $-\sqrt{\frac{81}{100}} =$ $-\frac{9}{10}$

15. $\pm\sqrt{2.25} =$ ± 1.5

16. $\sqrt{\frac{9}{400}} =$ $\frac{3}{20}$

Evaluate the expression.

17. $8\sqrt{9} - 5 =$ 19

18. $7 + 10\sqrt{\frac{1}{25}} =$ 9

19. $\sqrt{\frac{24}{6}} + 3 =$ 5

20. $6.2 + \sqrt{6.76} =$ 8.8

21. $7(\sqrt{400} - 9) =$ 77

22. $2\left(\sqrt{\frac{147}{3}} - 1\right) =$ 12

23. **ROOM** The area of the floor of a square room is 441 square feet. What is the length of one side of the floor of the room?

One side of the floor is 21 feet long.