



Name _____ Period _____ Date _____

Vocabulary: Define each word and give an example.

1. Simplified Radical
2. Principal Square Root

Short Answer:

3. What is the difference between a rational and irrational number? Give 3 examples of each.
4. State the converse of the Pythagorean Theorem and describe its use.

Review:

5. Simplify. Rewrite the expression with positive exponents. $\left(\frac{-4x^2}{2x^{-1}}\right)^{-1}$
6. Solve the absolute value equation. $5 = |2x - 1| - 2$

Problems:

****Be sure to show all work used to obtain your answer. Circle or box in the final answer.****

7. Evaluate the following.

a. $\sqrt{169}$

b. $-\sqrt{0.36}$

c. $\pm\sqrt{\frac{196}{25}}$

d. $\sqrt{-64}$

8. List all of the perfect squares from 1 to 400.



9. Which two integers do the following square roots lie between?

a. $-\sqrt{189}$

b. $\sqrt{45}$

10. Write the following radical expressions in simplest form.

a. $-\sqrt{48}$

b. $\sqrt{300}$

c. $\frac{2}{\sqrt{5}}$

d. $\sqrt{\frac{16}{12}}$

11. Find the product or quotient and simplify.

a. $\sqrt{2} \cdot \sqrt{12}$

b. $\frac{\sqrt{2}}{5} \cdot \frac{\sqrt{20}}{\sqrt{3}}$

c. $\frac{\sqrt{36}}{\sqrt{6}}$

12. Simplify the expressions.

a. $2\sqrt{12} + 3\sqrt{72} - \sqrt{2}$

b. $3\sqrt{8} - \sqrt{32}(1 + 5\sqrt{3})$

c. $4\sqrt{18} - \sqrt{3} + 8\sqrt{550}$

13. Find the area of a triangle with a base of $\sqrt{12}$ and a height of $(1 + \sqrt{8})$. Write your answer in simplest form.

14. Find the length of the missing leg of a right triangle if one leg measures 8 inches and the hypotenuse measures 12 inches.



15. If a triangle has sides of length 10, 24, and 26, is it a right triangle? Justify your answer.

Multiple Choice Section: **Circle the best answer.**

16. Which statement is the *best* approximation of $\sqrt{85}$?

- A. It lies between 9 and 10 and is closer to 10 than it is to 9.
- B. It lies between 9 and 10 and is closer to 9 than it is to 10.
- C. It lies between 81 and 100 and is closer to 100 than it is to 81.
- D. It lies between 81 and 100 and is closer to 81 than it is to 100.

17. Simplify the product $\sqrt{18} \cdot \sqrt{3}$.

- A. $2\sqrt{3}$
- B. $2\sqrt{6}$
- C. $3\sqrt{3}$
- D. $3\sqrt{6}$

18. Use the converse of the *Pythagorean Theorem* to determine which 3 numbers could represent the sides of a right triangle.

- A. 2,4,5
- B. 3,3,5
- C. 4,4,5
- D. 6,8,10

19. Find the area of a right triangle with legs $\sqrt{12}$ and $\sqrt{10}$. Give the exact answer in *simplest* form.

- A. $\sqrt{30}$
- B. $\sqrt{120}$
- C. $2\sqrt{30}$
- D. $10\sqrt{20}$