

GEOMETRY
 UNIT 7 - PYTHAGOREAN THEOREM
 7.1 - RADICALS

NAME _____
 PERIOD ____
 ASSIGNMENT ____

FACTORS of a number are **WHOLE NUMBERS** that the number can be divided by without a remainder.

List the factors of these:

*1. 2

1 and 2

*2. 4

1, 2, 4

3. 1

4. 3

5. 5

6. 6

7. 7

8. 8

PRIME NUMBERS (PRIME FACTORS) are numbers with **EXACTLY TWO FACTORS** (like 2, 3, 5, 7, above).

Write the following as the product of prime factors:

*9. 24

2 · 2 · 2 · 3

$$\begin{array}{r} 3 \\ 2 \overline{)6} \\ 2 \overline{)12} \\ 2 \overline{)24} \end{array}$$

10. 6

11. 9

12. 20

13. 36

14. 56

15. 144

16. 288

To simplify a **SQUARE ROOT**, find the **PRIME FACTORIZATION** of the number **INSIDE THE RADICAL**. For every **TWO** identical factors **INSIDE** the radical, eliminate them and put **ONE** identical factor on the **OUTSIDE** of the radical.

Simplify:

*17. $\sqrt{288}$

$2 \cdot 2 \cdot 3 \sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3}$

12 $\sqrt{2}$

*18. $2\sqrt{24}$

$2 \cdot 2 \sqrt{2 \cdot 2 \cdot 2 \cdot 3}$

4 $\sqrt{6}$

19. $\sqrt{20}$

20. $\sqrt{56}$

21. $\sqrt{72}$

22. $2\sqrt{20}$

23. $3\sqrt{48}$

24. $4\sqrt{36}$

*1.

*2.

- 3. 1
- 4. 1,3
- 5. 1,5
- 6. 1,2,3,6
- 7. 1,7
- 8. 1,2,4,8

*17.

*18.

*9.

- 10. $2 \cdot 3$
- 11. $3 \cdot 3$
- 12. $2 \cdot 2 \cdot 5$
- 13. $2 \cdot 2 \cdot 3 \cdot 3$
- 14. $2 \cdot 2 \cdot 2 \cdot 7$
- 15. $2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3$
- 16. $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3$

19. $2\sqrt{5}$

20. $2\sqrt{14}$

21. $6\sqrt{2}$

22. $4\sqrt{5}$

23. $12\sqrt{3}$

24. 24