Name _____

Reteaching
5-2

Prime Factorization

A prime number has exactly two factors, 1 and itself.

Example: 17 is prime. Its factors are 1 and 17.

A composite number has more than two factors.

Example: 10 is composite. Its factors are 1, 2, 5, and 10.

One way to find the prime factors of a composite number is to divide by prime numbers.

$84 \div \mathbf{2} = 42$	84 is even. Divide by 2.
$42 \div \mathbf{2} = 21$	Divide by 2 until the quotient is odd.
$21 \div \mathbf{3} = 7$	3 is a prime factor of 21, divide by 3.
$7 \div \mathbf{7} = 1$	7 is prime. You have found the prime factors.

Write the prime factors from least to greatest: $84 = 2 \times 2 \times 3 \times 7$.

Then write the factors in exponential form: $2^2 \times 3 \times 7$.

For **1** through **12,** if a number is prime, write *prime.* If the number is composite, write the prime factorization.

1. 28 _____

2. 36 _____

3. 29 _____

4. 70 _____

5. 55 _____

6. 81 _____

7. 84 _____

8. 99 _____

9. 75 _____

10. 43 _____

11. 45 _____

12. 64 _____

13. Writing to Explain Explain how you can check to see if your prime factorization is correct.

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14. Strategy Practice How can you tell that 342 is divisible by 3?

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