Name _____

Reteaching
9-1

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.

$24 \div \mathbf{2} = 12$	24 is even. Divide by 2.
$12 \div \mathbf{2} = 6$	Divide by 2 until the quotient is odd.
$6 \div \mathbf{2} = 3$	
$3 \div \mathbf{3} = 1$	3 is prime. You have found the prime factors.

Write the prime factors from least to greatest: $24 = 2 \times 2 \times 2 \times 3$.

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. 35 _____

5. 33 _____

6. 27 _____

7. 12 _____

8. 44 _____

9. 50 _____

10. 43 _____

11. 45 _____

12. 32 _____

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

_____

14. Strategy Practice How can you tell that 42 is divisible by 3?

_____

Name _____

Practice
9-1

Prime Factorization

For **1** through **10** if the number is prime, write *prime.* If the number is composite, write the prime factorization.

1. 24 _____

2. 43 _____

3. 39 _____

4. 33 _____

5. 47 _____

6. 32 _____

7. 48 _____

8. 37 _____

9. 27 _____

10. 40 _____

11. Writing to Explain Find the first ten prime numbers. Tell how you do it.

_____

_____

12. Reasoning How many even prime numbers are there?

A 0

B 1

C 2

D 3

13. Critical Thinking Which answer completes the sentence below?

The number 1 is _____.

A prime.

B composite.

C neither prime nor composite.

D both prime and composite.

