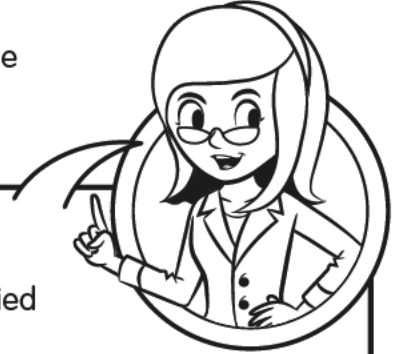# Fabulous Factors

Factors

Instructions:

For questions 1–4, find all the factors for each number and write whether the number is prime or composite. For questions 5–6, write all the factors for each number in the pair, and then circle the greatest common factor.

Helpful Hint:

Factors

Factoring a number means finding the smaller numbers that can be multiplied to make the original number.

Example: To find the factors of 6, write all the multiplication equations that equal 6.

$1 \times 6 = 6$
$2 \times 3 = 6$
$3 \times 2 = 6$
$6 \times 1 = 6$
The factors of 6 are **1,2,3**, and **6**.

A **composite number** has more than two factors.
6 is a composite number.

A **prime number** has only two factors: itself and 1. For example, you can only multiply 7×1 to get 7, so 7 is a prime number.
Other Examples: 3, 11, 13

Greatest Common Factor

Two or more numbers can have factors in common. To find the greatest common factor, first find all the factors for each number. Then look at the factors to see which ones the numbers have in common. The greatest of these numbers is called the greatest common factor.

Example:

6 and 8
Factors of 6: 1, ②, 3, 6
Factors of 8: 1, ②, 4, 8

The **greatest common factor** is 2.

4-57

Fabulous Factors

Find all the factors for the numbers below. Then write whether the number is "prime" or "composite."

	FACTORS	PRIME or COMPOSITE
1. 12		
2. 48		
3. 17		
4. 72		

5. Find the greatest common factor of 8 and 36.

_____

6. Find the greatest common factor of 28 and 49.

_____

Answer Key

		FACTORS	PRIME or COMPOSITE
1.	12	1, 2, 3, 4, 6, 12	composite
2.	48	1, 2, 3, 4, 6, 8, 12, 16, 24, 48	composite
3.	17	1, 17	prime
4.	72	1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72	composite

5. Find the greatest common factor of 8 and 36.

1 x 8 = 8   1 x 36 = 36
2 x ④ = 8   2 x 18 = 36
                   3 x 12 = 36
                   ④ x 9 = 36
                   6 x 6 = 36

_____4_____

6. Find the greatest common factor of 28 and 49.

1 x 28 = 28   1 x 49 = 49
2 x 14 = 28   ⑦ x 7 = 49
4 x ⑦ = 28

_____7_____