

# Lesson 9c: Greatest Common Factor (GCF)

**Objective: Find common factors and the greatest common factor of two numbers**

Complete on a separate sheet of paper and turn in to the basket.

**Warm-up:** Write the prime factorization of each number. Use exponents if possible.

1. 40
2. 32
3. 45
4. 27

**Learn About It:**

1. Common factor – the factor that is the same for two or more counting numbers
2. Greatest common factor (GCF) – the largest common factor of two or more numbers

**Two Methods. Example using 32 and 40**

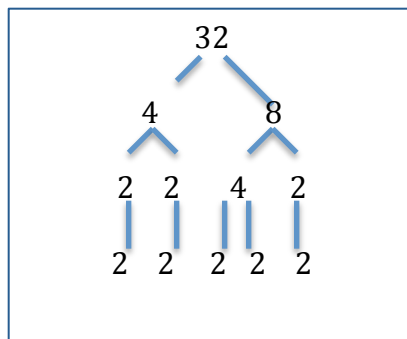
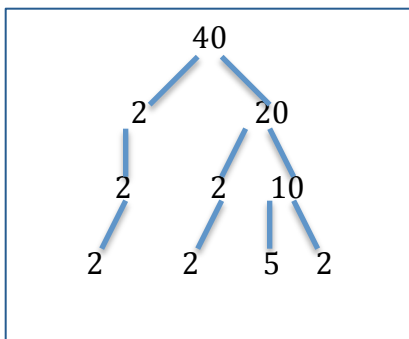
- 1) You can make a list
  - a) List all the factors of each number.
  - b) Identify common factors.
  - c) Compare to find the greatest common factor.
- 2) You can use prime factorization
  - a) Make factor trees for 32 and 40.
  - b) Identify all the common prime factors.
  - c) The product of the common factors is the GCF. The GCF is 8.

Factors of 32: 1, 2, 4, 8, 16, 32

Factors of 40: 1, 2, 4, 5, 8, 10, 20, 40

The common factors are 1, 2, 4, and 8

The greatest common factor of 32 and 40 is 8.



$$32 = 2 \times 2 \times 2 \times 2 \times 2$$
$$40 = 2 \times 2 \times 2 \times 5$$

The GCF is  $2 \times 2 \times 2 = 2^3 = 8$

Brainpop on Factoring

Practice 9.3

Homework: 9.3

App of the Day:

**Factor Samurai**

**Panasonic Prime Smash**

**Prime Numbers**

