

<b>Chapter 1</b>	<b>Numerical Expressions and Factors</b>
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Date:	<b>1.5 Greatest Common Factor</b>
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Essential Question	How can you find the greatest common factor of two numbers?
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<b>Vocab</b>	<b>Common Factor</b>	factors that are shared by two or more numbers
	<b>Greatest Common Factor (GCF)</b>	the greatest, or biggest, of the common factors

# Composition Book

## Lesson 1.5 GCF

- 1) **Find the GCF of 24 and 40.**  
(List the factors of each number.)

**Factors of 24**

① 24

② 12

3, ⑧

④ 6

**Factors of 40**

① 40

② 20

④ 10

5, ⑧

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

**The GCF of 24 and 40 is 8.**

2) Find the GCF of 12 and 56.

Use a list of factors.

Factors of 12

① 12

② 6

3, ④

Factors of 56

① 56

② 28

④ 14

7, 8

The common factors are 1, 2, and 4.

The GCF of 12 and 56 is 4.



Complete problems 1 and 2 on your notes page.

Find the GCF of the numbers using lists of factors.

1) 8, 36

8  
①, 8      ①, 36 36

②, ④      ②, 18

3, 12

④, 9

6, 6

The GCF of  
8 and 36 is 4.

2) 18, 72

18      72  
①, ①8      ①, 72

②, ⑨      ②, 36

③, ⑥      ③, 24

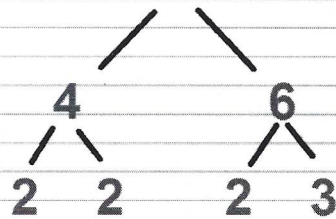
The GCF of      4, ①8  
18 and 72 is  
18.      ⑥, 12

8, ⑨

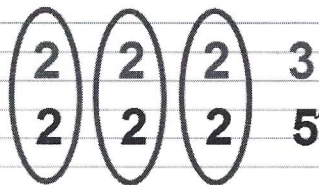
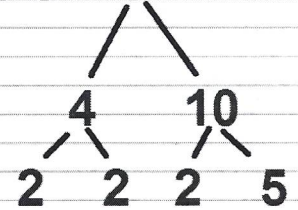
3) **Find the GCF of 24 and 40.**

**Use Prime Factorization.**

**Factors of 24:**



**Factors of 40:**

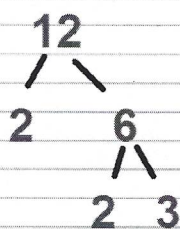


**The Greatest Common Factor of 24 and 40 is  $2^3 = 8$ .**

4) Find the GCF of 12 and 56.

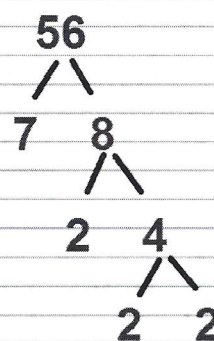
Use prime factorization.

Factors of 12

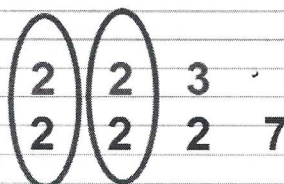


$$2^2 \times 3$$

Factors of 56



$$2^3 \times 7$$

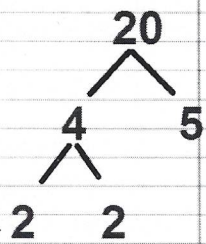


Both numbers have  $2^2$  in them so the GCF is 4.

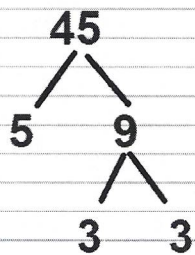
Complete problems 3 and 4 on your notes page.

Find the GCF of the numbers using prime factorization.

3) 20, 45



$$2^2 \times 5$$

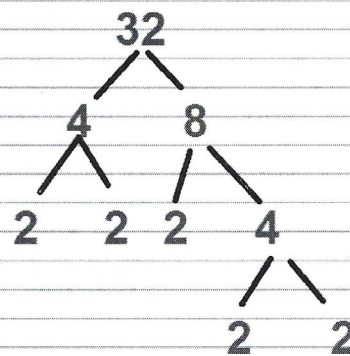


$$5 \times 3^2$$

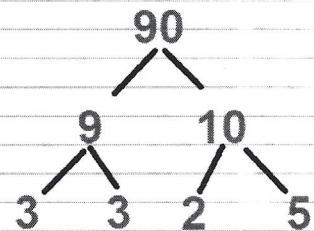
2 2 (5)  
3 3 (5)

The GCF of 20 and 45 is 5.

4) 32, 90



$$2^5$$



$$3^2 \times 2 \times 5$$

2 2 (2) 2 2  
3 3 (2) 5

The GCF of 32 and 90 is 2.



Solve this problem in your composition book

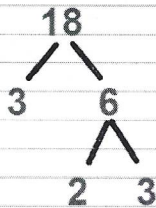
- 5) You are filling pinatas for your sister's birthday party. The list shows the gifts you are putting into the pinatas. You want identical groups of gifts in each pinata with no gifts left over. What is the greatest number of pinatas you can make?

List:

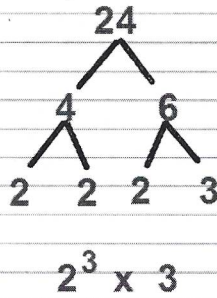
18 bottles of nail polish

24 pairs of earrings

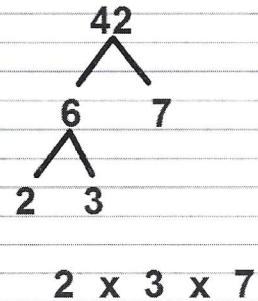
42 lollipops



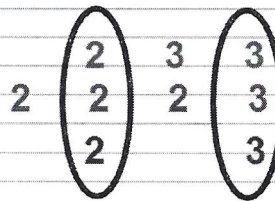
$$2 \times 3^2$$



$$2^3 \times 3$$



$$2 \times 3 \times 7$$



7

$$2 \times 3 = 6$$

You can make  
6 pinatas.



Solve this problem in your composition book

- 5) You are filling pinatas for your sister's birthday party. The list shows the gifts you are putting into the pinatas. You want identical groups of gifts in each pinata with no gifts left over. What is the greatest number of pinatas you can make?

List:

18 bottles of nail polish

24 pairs of earrings

42 lollipops

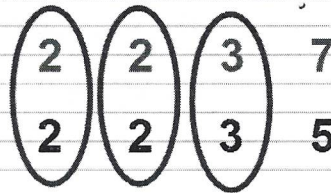
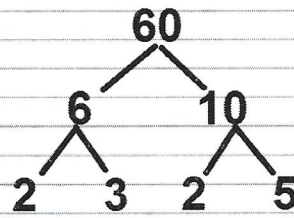
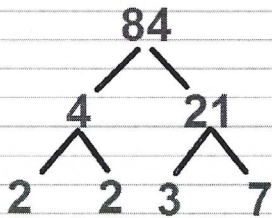
How many lollipops would be in each pinata?

$$42 \div 6 = 7$$

7 lollipops in each pinata.

Solve problem 5 on your notes page.

- 5) You are making identical flower arrangements to put on tables at a wedding. You have 84 red roses and 60 white roses. What is the greatest number of flower arrangements you can make?



$$2 \times 2 \times 3 = 12$$

You can make 12 identical flower arrangements.