Name _____

SKILL S24

Find Factors and Multiples

OBJECTIVE Determine whether a number is a factor or a multiple of another number.

A number is a **multiple** of all of its factors. You know that 1×6 and $2 \times 3 = 6$. So, 1, 2, 3, and 6 are **factors** of 6. Therefore, 6 is a multiple of 1, 2, 3, and 6.

What are the factors and multiples of 15?

Think: A number times 1 is equal to that number.

STEP 1 Multiply to find the factors of 15.	1 × 15 = 15 3 × 5 = 15
STEP 2 Identify the factors in the multiplication sentences.	1, 3, 5, 15 are factors of 15.
STEP 3 Skip count to find the multiples of 15. Write the numbers.	Multiples of 15: ~~5, 10~~, 15, 30, 45, 60, 75

Try This!

Write the multiples.

1. List the first 5 multiples of 12.

12, 24, 36, 48, 72

2. List the first 5 multiples of 30.

30, 60, 90, 120, 150

Is the number a factor of 8? Write *yes* or *no*.

3. 4

Yes

4. 6

No

Is the number a multiple of 5? Write *yes* or *no*.

5. 10

Yes

6. 16

No

Name _____

SKILL S25

Greatest Common Factor

OBJECTIVE Find the greatest common factor of a pair of numbers.

Factors - numbers that make up a product

Multiples - A list of all the products

A **factor** is a whole number that divides into another number exactly. A **common factor** is a factor that is the same for two or more numbers. The **greatest common factor**, or GCF, is the greatest factor for two or more numbers.

What is the GCF of 40 and 60?

STEP 1
List the factors of the first number.

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

STEP 2
List the factors of the second number.

Factors of 60:
1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, and 60.

STEP 3
Find the common factors.
Identify the greatest common factor.

Common factors of 40 and 60:
1, 2, 4, 5, 10, and 20.

The greatest common factor of 40 and 60 is 20.

Try This!

Find the greatest common factor (GCF).

5 - 1, 5
26 - 1, 2, 13, 26

1. 2, 8
2

2 - 1, 2
8 - 1, 2, 4, 8

2. 5, 26
1

3. 10, 35
5

10 - 1, 2, 5, 10
35 - 1, 5, 7, 35

4. 24, 30
6

24 - 1, 2, 3, 4, 6, 8, 12, 24
30 - 1, 2, 3, 5, 6, 10, 15, 30

5. 32, 48
16

32 - 1, 2, 4, 8, 16, 32
48 - 1, 2, 3, 4, 6, 8, 12, 16, 24, 48
6, 8

6. 16, 44

16 - 1, 2, 4, 8, 16
44 - 1, 2, 4, 11, 22, 44

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Name _____

SKILL S27

Prime and Composite Numbers

OBJECTIVE Tell whether a number is prime or composite.

Every whole number greater than 1 is either a **prime number** or a **composite number**. A prime number has only two factors, 1 and itself. A composite number has more than two factors. You can use division to tell if a number is a prime number or a composite number.

Is 59 a prime or a composite number?

STEP 1
Use division to find the factors of 59.

Think: Is 59 divisible by any number other than 1 and 59?

59 ÷ 1 = 59.
The factors of 59 are 1 and 59.

STEP 2
Count the number of factors.

Tell whether the number is prime or composite.

59 has only 2 factors.
Therefore, 59 is a prime number.

Try This!

Write whether each number is *prime* or *composite*.

1. 2 Prime
2. 98 Composite
3. 15 Composite ends in 5 or 0 so can be ÷ by 5
4. 47 Prime
5. 37 Prime
6. 39 Composite $3\overline{)39}$ 13
7. 22 Composite All even #s can be divided by 2.
8. 51 Prime

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SKILL S32

Compare Fractions

OBJECTIVE Compare fractions by using a common denominator and a common numerator.

If two fractions have the same denominator, the fraction with the greater numerator is greater. If two fractions have the same numerator, the fraction with the greater-size parts is greater.

Compare $\frac{3}{8}$ and $\frac{1}{4}$.

A

Use a common denominator.

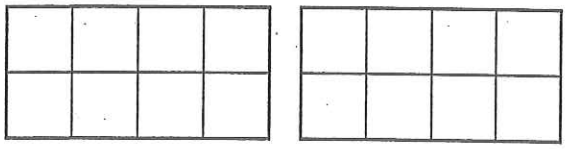
When two fractions have the same denominator, they have equal-size parts. You can compare the number of parts.

Think: 8 is a multiple of both 4 and 8. Use 8 as a common denominator.

$\frac{3}{8}$ already has a denominator of 8.

Shade the model. Then compare.

$\frac{1}{4} = \frac{1 \times 2}{4 \times 2} = \frac{2}{8}$



$\frac{3}{8} > \frac{2}{8}$

B

Use a common numerator.

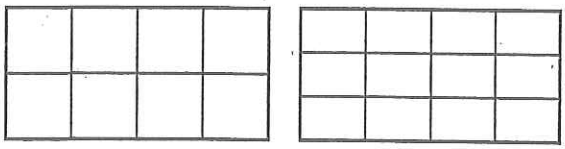
When two fractions have the same numerator, they have the same number of parts. You can compare the size of the parts.

Think: 3 is a multiple of both 3 and 1.

$\frac{3}{8}$ already has a numerator of 3.

Shade the model. Then compare.

$\frac{1}{4} = \frac{1 \times 3}{4 \times 3} = \frac{3}{12}$



$\frac{3}{8} > \frac{3}{12}$

Try This!

Compare the pair of fractions.

1. $\frac{3}{4}$ and $\frac{1}{2}$

   $\frac{3}{4} > \frac{1}{2}$

2. $\frac{2}{3}$ and $\frac{1}{6}$

   $\frac{2}{3} > \frac{1}{6}$

3. $\frac{2}{5}$ and $\frac{2}{10}$

   $\frac{2}{5} = \frac{2}{10}$

4. $\frac{1}{2}$ and $\frac{4}{9}$

   $\frac{1}{2} > \frac{4}{9}$