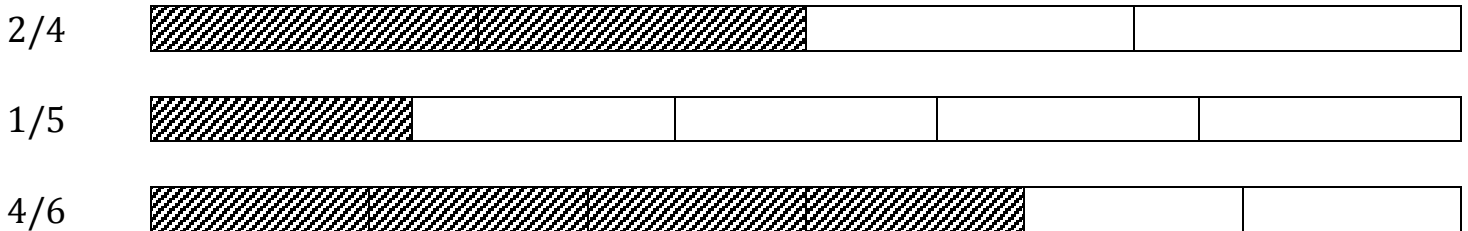


# Methods for Comparing Fractions

## Method 1: Draw it!

When comparing fractions, draw equal-sized boxes, divide them according to the denominator, shade them according to the numerator, and see which has the largest section.



**Advantages:** This gives you a visual way of comparing the fractions.

**Disadvantages:** It's very difficult to draw the boxes precisely, and when the shaded parts appear close together, you risk confusing yourself if you didn't draw them perfectly.

## Method 2: Compare to $\frac{1}{2}$

Look and see what the fraction equivalent to one-half would be for each of the denominators. See if the fractions you have are larger than  $\frac{1}{2}$ , equal to  $\frac{1}{2}$ , or smaller than  $\frac{1}{2}$ .

$$\frac{2}{4} = \frac{1}{2} = \text{DONE!} \quad \frac{2}{4} \text{ is equal to half!}$$

$$\frac{1}{5} \rightarrow \frac{1}{2} = \frac{2.5}{5} > \frac{1}{5} \quad \text{So } \frac{1}{5} \text{ is greater than half!}$$

$$\frac{4}{6} \rightarrow \frac{1}{2} = \frac{3}{6} < \frac{4}{6} \quad \text{So } \frac{4}{6} \text{ is less than half!}$$

Of course, you wouldn't normally write a fraction with a decimal in it. That's a big no-no. We did it here just to show us how a fraction equivalent to  $\frac{1}{2}$  would look with a denominator of 5.

**Advantages:** You can quickly and easily tell what fractions are larger, smaller, or equal to  $\frac{1}{2}$ .

**Disadvantages:** You cannot compare fractions that may both be larger than  $\frac{1}{2}$  or smaller than  $\frac{1}{2}$ . Also, you may work with fractions that we would normally call WRONG, such as writing  $\frac{2.5}{5}$ . (YIKES!)

## Method 3: Find like denominators

It's always easy to compare fractions when they have like denominators, meaning that their denominators are the same. Let's look at how we can help these three fractions to get like denominators:

$2/4 \rightarrow$  Multiply the numerator and the denominator by 15  $\rightarrow$  Now you have  $30/60$

$1/5 \rightarrow$  Multiply the numerator and the denominator by 12  $\rightarrow$  Now you have  $12/60$

$4/6 \rightarrow$  Multiply the numerator and the denominator by 10  $\rightarrow$  Now you have  $40/60$

Now that you have all the fractions with a like denominator, you can easily look at the numerators to see which is larger and which is smaller. Since  $40/60$  is larger than  $30/60$  or  $12/60$ , you know that  $40/60$  (or  $4/6$ ) is the largest fraction of the three.

**Advantages:** Can easily compare all your fractions.

**Disadvantages:** It can be hard to find a like denominator, especially when you're working with three or more different denominators. It can also get confusing when you need to choose what to multiply each pair of numerators and denominators by.

## Method 4: Divide to get Decimals

Take a calculator, type in the numerator, press divide, type in the denominator, and press the equal sign. There's the decimal. Then, just see what fractions gave you the largest or smallest decimals, and those are the largest or smallest fractions. If you can put the decimals in order, you can put the fractions in order.

$$2/4 = 2 \div 4 = 0.5$$

$$1/5 = 1 \div 5 = 0.2$$

$$4/6 = 4 \div 6 = 0.6666666666666666 \text{ (and so on...)}$$

**Advantages:** It's quick and easy with a calculator. You can easily compare all your fractions.

**Disadvantages:** If you don't have a calculator, this method might not be right for you!

## Method 5: Hockey Blade Cross Multiplication

This can be used to compare any two fractions. Write them down, side by side. Then, draw the hockey blade and multiply one fraction's numerator by the other fraction's denominator. Then do the opposite. Write the products above the numerator you used. The larger product will appear over the larger fraction.

**Advantages:** Quick, easy, and fun!

**Disadvantages:** Only works with 2 fractions.

