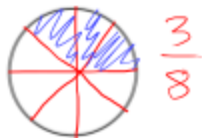


**Rational Numbers:** Any number that can be written as a fraction or terminating/repeating decimals

For example:  $\frac{1}{4}$ ,  $\frac{7}{5}$ ,  $-2\frac{1}{8}$ ,  $0.67$ ,  $-1.4\bar{5}$ ,  $1.\overline{28731891}$ ...

**Denominator:**

- Bottom of fraction
- total number of pieces in the whole



$$\frac{3}{8}$$



**Numerator:**

- top of fraction
- number of pieces you have (colored in)

$$\frac{4}{5}$$

**Simple Fractions:**

Numerator (top)  
Smaller than  
denominator (bottom)

$$\frac{2}{4}, \frac{3}{4}, \frac{1}{6}, \dots$$

**Improper Fractions:**

Num. bigger  
than denom.

$$\frac{27}{10}, \frac{3}{1}, \frac{5}{3}$$

**Mixed Fractions:**

Integer next to  
Simple fraction

$$3\frac{1}{2} = 3 + \frac{1}{2}$$

$$-4\frac{2}{3} = -(4 + \frac{2}{3}) = -4 - \frac{2}{3}$$

**Fractions to Decimals:**

$$\frac{1}{4} = 1 \div 4 = 0.25$$

$$\frac{8}{3} = 8 \div 3 = 2.666\dots \quad 2\frac{2}{3} = \frac{2 \cdot 7 + 3}{7} = \frac{17}{7}$$

$$= 2.\bar{6} \quad = \frac{3}{7} + 2 = 2.\overline{428571428571}$$

**Terminating Decimals to Fractions:**

$$\frac{155}{100} = \frac{155}{100}$$

2 times back → 2 zeros

$$\frac{3147}{10000} = \frac{3147}{10000}$$

↑ 4 zeros

$$\frac{23765}{1000} = \frac{23765}{1000}$$

Repeating decimals to fractions is possible, but a bit more complicated...

$$0.\overline{234} = \frac{234}{999}$$

$$0.\overline{23} = \frac{23}{99}$$

