

# Fraction to Decimal

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Although there are a number of tricks for specific cases, there is really only one method that always works for changing fractions to decimals. Also, if done correctly, there are only two possible outcomes:

1. **Terminating Decimal** – A decimal that ends with no remainder after some varying number of places.
2. **Repeating Decimal** – A decimal that has one or more digits that repeat: you will know that your decimal repeats if ever you get the same remainder as you had before. Further, the digits that repeat will be those from where you last got that remainder.

In either case, a fraction is turned into a decimal by dividing the numerator (top) by the denominator (bottom).

Ex. Terminating Decimal  $\frac{3}{8}$

$$3 \div 8 = 0.875$$

Ex. Terminating Decimal  $\frac{7}{20}$

$$7 \div 20 = 0.35$$

Ex. Repeating Decimal  $\frac{5}{11}$

$$5 \div 11 = 0.\overline{45}$$

Ex. Repeating Decimal  $\frac{2}{7}$

$$2 \div 7 = 0.\overline{285614}$$