Rates

Words	Examples	Rate as a fraction
=	1 foot = 12 inches	$\frac{1 \text{ foot}}{12 \text{ inches}}$ or $\frac{12 \text{ inches}}{1 \text{ foot}}$
Equal, equals	10 dimes are equal to 4 quarters	$\frac{10 \text{ dimes}}{4 \text{ quarters}}$ or $\frac{4 \text{ quarters}}{10 \text{ dimes}}$
In	7 days in a week In a week there are 7 days	$\frac{7 \text{ days}}{1 \text{ week}}$ or $\frac{1 \text{ week}}{7 \text{ days}}$
each, every	4 legs on every horse Every horse has 4 legs	$\frac{4 \text{ legs}}{1 \text{ horse}}$ or $\frac{1 \text{ horse}}{4 \text{ legs}}$
For	2 pizzas for $20	$\frac{2 \text{ pizzas}}{\$20}$ or $\frac{\$20}{2 \text{ pizzas}}$
Per	30 miles per hour	$\frac{30 \text{ miles}}{1 \text{ hour}}$ or $\frac{1 \text{ hour}}{30 \text{ miles}}$
A, an	$120 a day	$\frac{\$120}{1 \text{ day}}$ or $\frac{1 \text{ day}}{\$120}$
To	5 boys to 6 girls	$\frac{5 \text{ boys}}{6 \text{ girls}}$ or $\frac{6 \text{ girls}}{5 \text{ boys}}$

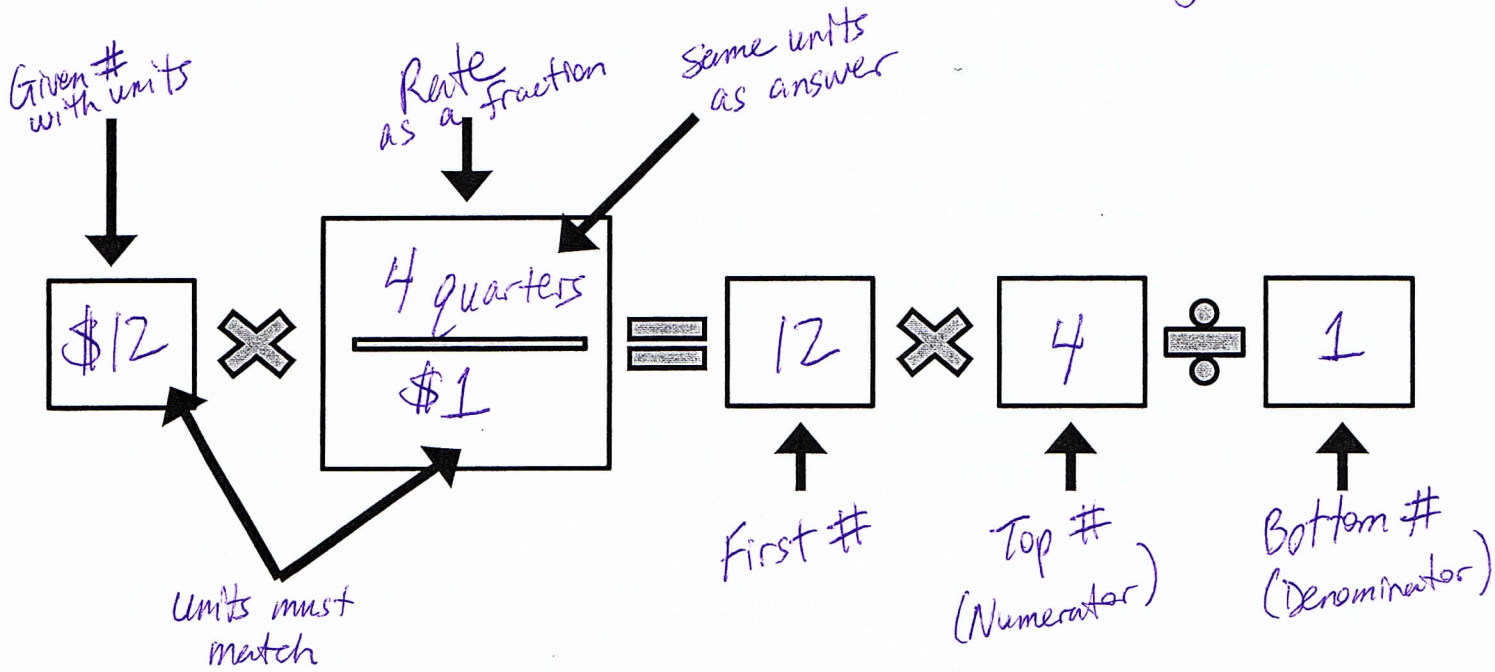
There may be other words or phrases that also indicate a rate, so be careful!

Other examples:

Using rates with multiplication and division

Example problem #1: Given that $1 = 4 quarters, how many quarters are equal to $12?

Rate — given #



Dividing by 1 is the same as multiplying by 1 →

$12 \times 4 \div 1$

$48 \div 1 = 48$ Answer

$12 \times 4 = 48$

48 quarters

Example problem #2: Given that $1 = 4 quarters, how many dollars are equal to 12 quarters?

Rate — given #

$$12 \text{ quarters} \times \frac{\$1}{4 \text{ quarters}} = 12 \times 1 \div 4$$

$12 \div 4 = \$3$

* We haven't looked at division yet, so it's okay if you stop at $12 \div 4$