

MODULE 6: PROPORTIONS

"IT IS NEVER TOO LATE TO BE WHAT YOU MIGHT HAVE BEEN."

2.3 SOLVING PROPORTIONS

What does a proportion problem look like?

You solve this problem by _____

Cross Multiplying: Multiply _____ across the equals sign.

Ex. Solve $\frac{x}{9} = \frac{6}{27}$

Ex. Solve $\frac{14}{9} = \frac{30}{x-3}$

Ex. Solve $\frac{x}{25} = \frac{6}{15}$

Ex. Solve $\frac{11}{5} = \frac{x+1}{8}$

Writing Proportions

Relationships are made _____ or _____,
never _____.

Ex. A man can eat 5 hamburgers in 2.5 minutes. How many hamburgers can the man eat in 10 minutes?

a. Set up the proportion (4 different ways)

1)

2)

3)

4)

Note: It does not matter which of the 4 ways are used

b. Solve the proportion

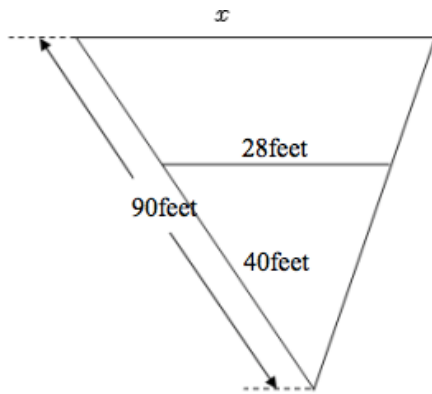
Ex. A Car can travel 500 miles on 25 gallons of gas. How many miles can the car travel on 10 gallons of gas?

Ex. Jim can type 120 words in 3 minutes. How many minutes would it take Jim to type 500 words?

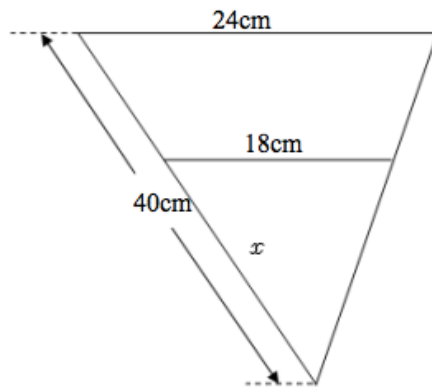
Ex. In a capture-recapture study, a biologist tagged and released 260 deer. A month later she captured 60 deer, 10 of which had tags. About how many deer were in the population?

Ex. You need $1\frac{1}{4}$ cups of sugar to make 20 cookies. How many cups of sugar will you need to make 16 cookies?

Ex. Solve for x



Ex. Solve for x



2.3 CONVERT UNITS OF MEASUREMENT

When converting, set up like a _____ problem.

Ex. Convert 12 meters to feet (round to the nearest tenth)

Step 1: Write down the proper conversion to use

Step 2: Set up a proportion (conversion = problem)

Step 3: Solve proportion by cross multiplying

Ex. Convert 112 kilograms to pounds (round to the nearest tenth)

Ex. Ex. Convert 139 inches to meters
(round to the nearest hundredths)

Ex. Ex. Convert 12 liters to gallons
(round to the nearest thousandths)

Ex. Ex. Convert 13 centimeter to inches
(round to the nearest tenths)

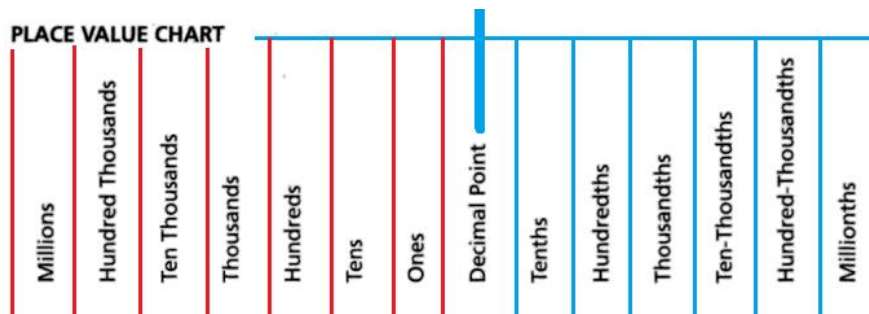
Conversion Table

Length		
Metric		U.S. System
1 meter (m)	≈	1.09 yards (yd)
1 meter (m)	≈	3.28 feet (ft)
1 kilometer (km)	≈	0.62 miles (mi)
2.54 centimeters (cm)	≈	1 inch (in)
0.30 meters (m)	≈	1 foot (ft)
1.61 kilometer (km)	≈	1 mile (mi)

Capacity		
Metric		U.S. System
1 liter (L)	≈	1.06 quarts (qt)
1 liter (L)	≈	0.26 gallons (gal)
3.79 liters (L)	≈	1 gallon (gal)
0.95 liter (L)	≈	1 quart (qt)
29.57 milliliter (ml)	≈	1 fluid ounce (fl oz)

Weight (Mass)		
Metric		U.S. System
1 kilogram (kg)	≈	2.20 pounds (lb)
1 gallon (gal)	≈	0.04 ounces (oz)
0.45 kilograms (kg)	≈	1 pound (lb)
28.35 grams (g)	≈	1 ounce (oz)

Temperature	
Celsius (C) to Fahrenheit (F)	
$F = \frac{9}{5}C + 32$	$C = \frac{5}{9}(F - 32)$



Rounding: Look at the place value after it (to the _____)

If the value is greater than or equal to 5, then round _____

If the value is less than 5, then the value _____

Homework Checklist

- Section 2.3 Solving Proportions
- Section 2.3 Convert Units of Measurement
- Module 6: Rational Expressions