

Math 7H - Unit 3

Day 4 - Convert MORE Unit Rates

Lesson Objectives:

- I can compute unit rates with like and different units.

To convert one unit into another unit, set up a multiplication problem with a unit ratio.



- 8 h
 $\frac{8 \cancel{\text{hr}}}{1} \cdot \frac{60 \cancel{\text{min}}}{1 \cancel{\text{hr}}} = 480 \text{ min}$
- 45 min
 $\frac{45 \cancel{\text{min}}}{1} \cdot \frac{1 \cancel{\text{hr}}}{60 \cancel{\text{min}}} \cdot \frac{1 \cancel{\text{day}}}{24 \cancel{\text{hrs}}} = \frac{45}{1440} = \frac{1}{32} \text{ days}$
- 342 sec
- 2 days
 $\frac{2 \cancel{\text{days}}}{1} \cdot \frac{24 \cancel{\text{hr}}}{1 \cancel{\text{day}}} \cdot \frac{3600 \cancel{\text{sec}}}{1 \cancel{\text{hr}}} = 172,800 \text{ sec}$

To convert one unit rate into another unit rate, set up a multiplication problem with at least one unit ratio.



- 8 ft/h
 $\frac{8 \cancel{\text{ft}}}{1 \cancel{\text{hr}}} \cdot \frac{12 \cancel{\text{in}}}{1 \cancel{\text{ft}}} \cdot \frac{1 \cancel{\text{hr}}}{60 \cancel{\text{min}}} = \frac{96}{60} = 1.6 \frac{\text{in}}{\text{min}}$
- 45 yd/min
- 342 in/sec
- 2 miles/day

$$\frac{2 \cancel{\text{mi}}}{1 \cancel{\text{day}}} \cdot \frac{5280 \cancel{\text{ft}}}{1 \cancel{\text{mi}}} = 10,560 \frac{\text{ft}}{\text{day}}$$

Units of Length		Units of Volume or Capacity	
Customary	Metric	Customary	Metric
1 in	2.54 cm	1 pt	0.4732 L
1 yd	0.9144 m	1 qt	0.9464 L
1 mi	1.6093 km	1 gal	3.7853 L

Units of Weight or Mass	
Customary	Metric
1 oz	28.3495 g
1 lb	0.4536 kg

The symbol \approx means "approximately equal to" and is used when estimating an answer.

To convert one unit into another unit, set up a multiplication problem with a unit ratio.



- 8 m
 $\frac{8 \cancel{\text{m}}}{1} \cdot \frac{1 \cancel{\text{km}}}{1000 \cancel{\text{m}}} \cdot \frac{1 \cancel{\text{mi}}}{1.6093 \cancel{\text{km}}} = \frac{8}{1609.3} \approx 0.0049 \text{ mi}$
- 45 mm
- 342 cm
 $\frac{342 \cancel{\text{cm}}}{1} \cdot \frac{1 \cancel{\text{m}}}{100 \cancel{\text{cm}}} \cdot \frac{1 \cancel{\text{yd}}}{91.44 \cancel{\text{cm}}} = \frac{342}{91.44} \approx 3.74 \text{ yd}$
- 2 km

To convert one unit rate into another unit rate, set up a multiplication problem with at least one unit ratio.



- 8 m/h
- 45 mm/min
- 342 cm/sec
- 2 km/day

$$\frac{2 \cancel{\text{km}}}{1 \cancel{\text{day}}} \cdot \frac{1 \cancel{\text{mi}}}{1.6093 \cancel{\text{km}}} \cdot \frac{1 \cancel{\text{day}}}{24 \cancel{\text{hr}}} \cdot \frac{1 \cancel{\text{hr}}}{3600 \cancel{\text{sec}}} = \frac{2}{11,584,800} \frac{\text{mi}}{\text{sec}}$$

Homework

Convert MORE Unit Rates WKS
and EXTRA CREDIT

* Individual Think Time *



What to do if you get stuck...

1. Reread the problem. Did you write it down correctly?
2. Reread your notes. Is there a problem similar that we did together in class?
3. Find a problem similar in your book. Try this one to see if it helps.
4. Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...

