

7th Grade  
Dec 4, 2020

Please get out your video notes to review and complete.

Today we will:  
-complete examples in video notes  
-work on white boards to practice converting rates

HOMEWORK:

ALEKS due Monday  
night 11:59 pm



## **Chapter 5 Lesson 4 Part 2**

### ***Converting Rates***

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**We have practiced converting UNITS. Now we need to apply that to converting RATES.**

**For example, instead of just changing miles to feet, we might change miles per hour to feet per second. We are going to learn by example.**

**We will continue to use dimensional analysis.**  
**That is, we will set up our units so our unwanted units**  
**cancel out.**

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Convert each rate. Round to the nearest hundredth. Must show conversion setup. Calculators OK

1.  $18 \text{ m/min} = \blacksquare \text{ m/s}$

$$1 \text{ min} \times \frac{1 \text{ min}}{60 \text{ s}} = \frac{18 \text{ m}}{60 \text{ s}}$$

$$18 \div 60 = \textcircled{0.3 \text{ m/s}}$$

2.  $5.7 \text{ gal/h} = \blacksquare \text{ gal/min}$

$$\frac{5.7 \text{ gal}}{1 \text{ h}} \times \frac{1 \text{ h}}{60 \text{ min}} =$$

$$5.7 \div 60 = 0.10 \frac{\text{gal}}{\text{min}}$$

3.  $264 \text{ yd/s} = \blacksquare \text{ ft/min}$

$$\frac{264 \text{ yd}}{1 \text{ s}} \times \frac{3 \text{ ft}}{1 \text{ yd}} \times \frac{60 \text{ s}}{1 \text{ min}} =$$

$$264 \times 3 \times 60 = \textcircled{47,520 \text{ ft/min.}}$$

4.  $2 \text{ qt/min} = \blacksquare \text{ pt/h}$

$$\frac{2 \text{ qt}}{1 \text{ min}} \times \frac{2 \text{ pt}}{1 \text{ qt}} \times \frac{60 \text{ min}}{1 \text{ h}}$$

$$240 \text{ pt/h}$$

5.  $154 \text{ mi/h} = \blacksquare \text{ mi/s}$

$$\frac{154 \text{ mi}}{1 \text{ h}} \times \frac{1 \text{ h}}{60 \text{ min}} \times \frac{1 \text{ min}}{60 \text{ s}}$$

$$\frac{154 \times 1 \times 1}{1 \times 60 \times 60} = \frac{\textcircled{154}}{\textcircled{3600}}$$

$$154 \div 3600 = \textcircled{0.04 \text{ mi/s}}$$

6.  $99 \text{ in./s} = \blacksquare \text{ in./day}$

$$\frac{99 \text{ in}}{1 \text{ s}} \times \frac{60 \text{ min}}{1 \text{ min}} \times \frac{60 \text{ min}}{1 \text{ h}} \times \frac{24 \text{ h}}{1 \text{ day}}$$

$$8,553,600 \text{ in./day}$$

## Measurement Conversions

Length	
Customary to Metric	Metric to Customary
1 in = 2.54 cm	1 cm = 0.394 in
1 ft = 0.305 m	1 m = 3.279 ft
1 yd = 0.914 m	1 m = 1.094 yd
1 mi = 1.609 km	1 km = 0.621 mi
1 m = 100 cm	
1 km = 1000 m	
1 mi = 5280 ft	
1 yd = 3 ft	

Capacity	
Customary to Metric	Metric to Customary
1 fl oz = 29.574 mL	1 mL = 0.034 fl oz
1 pt = 0.473 L	1 L = 2.114 pt
1 qt = 0.946 L	1 L = 1.057 qt
1 gal = 3.785 L	1 L = 0.264 gal
1 L = 1000 mL	
1 c = 8 fl oz	
1 pt = 2 c	
1 qt = 2 pt	
1 gal = 4 qt	

Mass or Weight	
Customary to Metric	Metric to Customary
1 oz = 28.350 g	1 g = 0.035 oz
1 lb = 0.454 kg	1 kg = 2.203 lb
1 kg = 1000 g	





## \*on whiteboards

### Unit Conversions: Chapter 5 Lesson 4

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**Convert the following rates. Round to the nearest hundredth if needed.**

1. Convert 35 miles to hour to km/h.
2. Convert 10.5 feet/sec to yards/min.
3. Convert 50 meters per second to km/h.
4. Convert 130 km/h to feet per second.
5. Convert 10 mL per second to Liters per minute.
6. Convert 5 gallons an hour to cups per second.

