

★ 1 mile = 1.61 km

KHDBDCM

Name _____ Date _____

Factor Labeling

Complete each of the following. Show all work!!! Please circle your final answer.

1. If the broom of the wicked witch of the west measures 1340 millimeters, how long is the broom in meters?

$$\frac{1 \text{ m}}{1000 \text{ mm}} \times \frac{1340 \text{ mm}}{1} = \boxed{1.34 \text{ m}}$$

2. If a tree in the forest grows 2 inches/year, how old is a tree that is 150 feet tall?

$$\frac{1 \text{ yr}}{2 \text{ in}} \times \frac{12 \text{ in}}{1 \text{ ft}} \times \frac{150 \text{ ft}}{1} = \boxed{900 \text{ years}}$$

3. A moat around a castle needs 50 gallons of water a minute to stay full. How many gallons are added to the moat every hour to keep the moat full?

$$\frac{50 \text{ gallons}}{1 \text{ min}} \times \frac{60 \text{ min}}{1 \text{ hr}} = \boxed{3000 \text{ gal/hr}}$$

$\frac{50 \text{ gal}}{\text{min}} \rightarrow \frac{\text{gallons}}{\text{hr}}$

4. A lion can run at speeds topping 45 miles per hour. What is his speed in meters per second?

$$\frac{1000 \text{ m}}{1 \text{ km}} \times \frac{1.61 \text{ km}}{1 \text{ mile}} \times \frac{45 \text{ miles}}{1 \text{ hr}} \times \frac{1 \text{ hr}}{60 \text{ min}} \times \frac{1 \text{ min}}{60 \text{ sec}} = \boxed{20 \text{ m/sec}}$$

$1.61 \text{ km} = 1 \text{ mile}$ $\frac{45 \text{ miles}}{\text{hr}} \rightarrow \frac{\text{m}}{\text{sec}}$

5. If you picked 200 pounds of strawberries a day, what is this amount in tons per year?

$$\frac{1 \text{ ton}}{2000 \text{ lbs}} \times \frac{200 \text{ lbs}}{1 \text{ day}} \times \frac{365.25 \text{ days}}{1 \text{ year}} = \boxed{36.5 \frac{\text{ton}}{\text{year}}}$$

$\frac{200 \text{ lbs}}{\text{day}} \rightarrow \frac{\text{ton}}{\text{year}}$

- ★ 6. A prison pays a guard \$8.25 per hour. How much does the average guard make in a 40 hour work week? (there is no overtime)

$$\frac{\$8.25}{1 \text{ hr}} \times \frac{40 \text{ hr}}{1 \text{ week}} = \boxed{\$330/\text{wk}}$$

7. Your grandma canned 30 quarts of tomatoes. How many gallons of tomatoes did she can?

$$\frac{1 \text{ gallon}}{4 \text{ qts}} \times \frac{30 \text{ qts}}{1} = \boxed{7.5 \text{ gallons}}$$

8. The speed limit on a hwy in Europe is 85 km/hr. How fast is that in mph?

$$\frac{1 \text{ miles}}{1.61 \text{ km}} \times \frac{85 \text{ km}}{1 \text{ hr}} = \boxed{53 \frac{\text{miles}}{\text{hr}}}$$

- ★ 9. If the average speed of a car is 45 km/hr, how far (in miles) can it travel in 40 minutes?

$$\frac{1 \text{ miles}}{1.61 \text{ km}} \times \frac{45 \text{ km}}{1 \text{ hr}} \times \frac{40 \text{ min}}{60 \text{ min}} = \boxed{19 \text{ miles}}$$

- ★ 10. A bullet travels at 850m/s. How long will it take a bullet to go 1.0 km?

$$\frac{1 \text{ seconds}}{850 \text{ m}} \times \frac{1000 \text{ m}}{1 \text{ km}} \times \frac{1 \text{ km}}{1} = \boxed{1.2 \text{ seconds}}$$