

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Period: \_\_\_\_\_

## UNIT 4 TEST REVIEW

**DIRECTIONS:** Write in PENCIL and SHOW YOUR WORK otherwise no credit will be given.

- 1) If one meter = 3.28 feet, about how many yards are in 11 kilometers?

11 km  $\rightarrow$  yards

$$\frac{11 \text{ km}}{1} \times \frac{1000 \text{ m}}{1 \text{ km}} \times \frac{3.28 \text{ ft}}{1 \text{ m}} \times \frac{1 \text{ yd}}{3 \text{ ft}} = 12,026.6\bar{7} \text{ yards}$$

- 2) A carpenter purchased 7 feet (ft) 10 inches (in) of window trim. The table shows the length and number of pieces he needs to cut from the window trim. How much of the original window trim will the carpenter have left after cutting off the pieces he needs?

Length	Number of Pieces Needed
24 in.	2
38 in.	1

- a) first we change 7 feet to inches because all the other #'s in the problem are in inches.

7 ft  $\rightarrow$  in

$$\frac{7 \text{ ft}}{1} \times \frac{12 \text{ in}}{1 \text{ ft}} = 84 \text{ inches}$$

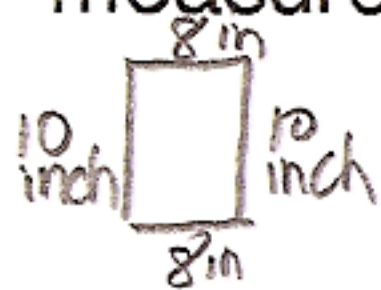
- b) 84 inches + 10 inches = he bought 94 inches total

- c) he needs to cut 2 pieces of 24 inches =  $24 \times 2 = 48$  inches

- d) 48 inches + 38 in = he needs to cut 86 inches total

- e) 94 inches - 86 inches = 8 inches EXTRA!

- 3) A photograph measures 8 inches by 10 inches. What is the perimeter of the photo measured in centimeters? Round your answer to the nearest hundredth.



P = add all sides

$$P = 8 + 8 + 10 + 10 \text{ inches}$$

$$P = 36 \text{ inches}$$

36 inches  $\rightarrow$  cm

$$\frac{36 \text{ inches}}{1} \times \frac{2.54 \text{ cm}}{1 \text{ in}} = 91.44 \text{ cm}$$

- 4) One liter is approximately equal to 1.06 quarts. Daquan measured the capacity of the bucket. Which of the following statements is true?

- A. The number of liters the bucket holds is greater than the number of quarts.  
☒ B. The number of quarts the bucket holds is greater than the number of liters. \*  
 C. The number of liters is equal to the number of quarts.  
 D. You must know the exact capacity of the bucket to determine if quarts or liters is greater.

$$1 \text{ liter} = 1.06 \text{ qts}$$

there are more quarts than liters!

My **education**. My **future**.

5) Each story of Ms. Nguyen's apartment building is 14 feet tall. The building has 15 stories. What is the height of the building in meters, to the nearest tenth of a meter?

$$15 \times 14 \text{ ft} = 210 \text{ ft is height of building}$$

$$210 \text{ ft} \rightarrow \text{m}$$

$$\frac{210 \text{ ft}}{1} \times \frac{1 \text{ m}}{3.28 \text{ ft}} = 64.02 \text{ m}$$

6) The Equestrian Center at the Florida State Fairgrounds has a rectangular covered arena to shield the horses and riders from the sun. Its dimensions are 314 feet by 165 feet. What is the area of the arena in square feet? meters?

$$A = lw$$

$$A = (314 \text{ ft})(165 \text{ ft}) = 51810 \text{ feet}$$

$$51810 \text{ ft} \rightarrow \text{m}$$

$$\frac{51810 \text{ ft}}{1} \times \frac{1 \text{ m}}{3.28 \text{ ft}} = 15795.73 \text{ m}$$

7) The surface area of a ball is 288 <sup>in<sup>2</sup></sup> square inches. How many <sup>ft<sup>2</sup></sup> square feet is the ball?

$$288 \text{ in}^2 \rightarrow \text{ft}^2$$

$$\frac{288 \text{ in}^2}{1} \times \frac{1 \text{ ft}}{12 \text{ in}} \times \frac{1 \text{ ft}}{12 \text{ in}} = 2 \text{ ft}^2$$

Remember that when we have area, we double conversion factors!

8) A farmer needs to calculate the number of cubic yards in 837 <sup>ft<sup>3</sup></sup> cubic feet of soil. How many <sup>yd<sup>3</sup></sup> cubic yards are equivalent to 837 <sup>ft<sup>3</sup></sup> cubic feet?

$$\text{yd}^3$$

$$\text{ft}^3$$

when we have volume, we multiply our conversion factor 3 times.

$$837 \text{ ft}^3 \rightarrow \text{yd}^3$$

$$\frac{837 \text{ ft}^3}{1} \times \frac{1 \text{ yd}}{3 \text{ ft}} \times \frac{1 \text{ yd}}{3 \text{ ft}} \times \frac{1 \text{ yd}}{3 \text{ ft}} = 31 \text{ yd}^3$$

9) A prism has a volume of 12 ft<sup>3</sup>. What is the volume of the prism in cubic inches?

Always remember 12 inches = 1 foot

$$12 \text{ ft}^3 \rightarrow \text{in}^3$$

$$\frac{12 \text{ ft}^3}{1} \times \frac{12 \text{ in}}{1 \text{ ft}} \times \frac{12 \text{ in}}{1 \text{ ft}} \times \frac{12 \text{ in}}{1 \text{ ft}} = 20,736 \text{ in}^3$$

we multiply conversion factor 3 times because we have volume.

10) Convert 25°C to degrees Fahrenheit.

$$25^\circ\text{C} \rightarrow ^\circ\text{F}$$

$$^\circ\text{F} = (^\circ\text{C} \times 1.8) + 32$$

$$^\circ\text{F} = (25 \times 1.8) + 32$$

$$^\circ\text{F} = 77$$

- 11) The average high temperature in Florida for the month of march is 77 degrees Fahrenheit. What is this temperature in degrees Celsius?

$$77^{\circ}\text{F} \rightarrow ^{\circ}\text{C}$$

$$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \div 1.8$$

$$^{\circ}\text{C} = (77 - 32) \div 1.8$$

$$^{\circ}\text{C} = 25$$

remember to do order of operations parentheses first.

- 12) Convert 30 miles per hour to feet per second.

$$\frac{30 \text{ mi}}{\text{hr}} \rightarrow \frac{\text{ft}}{\text{sec}}$$

$$\frac{30 \text{ mi}}{\text{hr}} \times \frac{5280 \text{ ft}}{1 \text{ mi}} \times \frac{1 \text{ hr}}{60 \text{ min}} \times \frac{1 \text{ min}}{60 \text{ sec}} = \frac{44 \text{ ft}}{\text{sec}}$$

- 13) Diamond drives her car 23,000 miles per year. How many miles does she drive per month?

$$\frac{23,000 \text{ mi}}{1 \text{ yr}} \rightarrow \frac{\text{mi}}{\text{month}}$$

$$\frac{23000 \text{ mi}}{1 \text{ yr}} \times \frac{1 \text{ yr}}{12 \text{ months}} = \frac{1916.6\bar{6} \text{ mi}}{\text{month}}$$

- 14) A conveyer belt moves at a rate of 8 miles in 4 hours. How many feet per minute does the belt move?

$$\frac{8 \text{ miles}}{4 \text{ hours}} \rightarrow \frac{\text{feet}}{\text{min}}$$

$$\frac{8 \text{ mi}}{4 \text{ hr}} \times \frac{5280 \text{ ft}}{1 \text{ mi}} \times \frac{1 \text{ hr}}{60 \text{ min}} = \frac{176 \text{ ft}}{\text{min}}$$