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Date \_\_\_\_\_  
Geometry

## Conversions

Convert the following units and round to the nearest tenth if necessary

1. 750 meter to kilometer

$$750 \text{ m} \cdot \frac{1 \text{ km}}{1000 \text{ m}} = \frac{750}{1000} = .75 \text{ km}$$

2. 1.2 kilometer to meter

$$1.2 \text{ km} \cdot \frac{1000 \text{ m}}{1 \text{ km}} = 1.2(1000) = 1200 \text{ m}$$

3. 220 centimeter to meter

$$220 \text{ cm} \cdot \frac{1 \text{ m}}{100 \text{ cm}} = \frac{220}{100} = 2.2 \text{ m}$$

4. 3.45 meter to centimeter

$$3.45 \text{ m} \cdot \frac{100 \text{ cm}}{1 \text{ m}} = 3.45(100) = 345 \text{ cm}$$

5. 45 minutes to hours

$$45 \text{ min} \cdot \frac{1 \text{ hour}}{60 \text{ min}} = \frac{45}{60} = .75 \text{ hours}$$

6. 1.2 hours to minutes

$$1.2 \text{ hours} \cdot \frac{60 \text{ min}}{1 \text{ hrs}} = 1.2(60) = 72 \text{ min}$$

7. 1.6 inches to centimeter

$$1.6 \text{ inches} \cdot \frac{2.54 \text{ cm}}{1 \text{ inch}} = 1.6(2.54) = 4.064 \text{ cm}$$

8. 3.2 centimeter to inches

$$3.2 \text{ cm} \cdot \frac{1 \text{ in}}{2.54 \text{ cm}} = \frac{3.2}{2.54} = 1.3 \text{ in}$$

9. 6.2 miles to feet

$$6.2 \text{ mi} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}} = 6.2(5280) = 32736 \text{ ft}$$

10. 5000 feet to miles

$$5000 \text{ ft} \cdot \frac{1 \text{ mi}}{5280 \text{ ft}} = \frac{5000}{5280} = .9 \text{ mi}$$

11. 4 gallons to kiloliters

$$4 \text{ gal} \cdot \frac{1 \text{ kL}}{264 \text{ gal}} \cdot \frac{1 \text{ kL}}{1000 \text{ kL}} = \frac{4}{264(1000)} = .015 \text{ kL}$$

12. 2.4 feet to centimeters

$$2.4 \text{ ft} \cdot \frac{12 \text{ in}}{1 \text{ ft}} \cdot \frac{2.54 \text{ cm}}{1 \text{ in}} = 2.4(12)(2.54) = 73.152 \text{ cm}$$

reference sheet

13. What is the volume, to the nearest cubic foot, of a rectangular prism that is 2.4 feet high, 3.2 feet wide, and 9 inches high?

Ans.  $\frac{1 \text{ ft}}{12 \text{ in}} = \frac{9}{12} = .75 \text{ ft}$   
*must convert*

$$V = lwh$$

$$V = .75(3.2)(2.4)$$

$$V = 5.76 \text{ ft}^3$$

14. What is the volume of a cylinder, to the nearest tenth of a cubic meter, whose radius is 1200 meters and height is 0.8 kilometers?

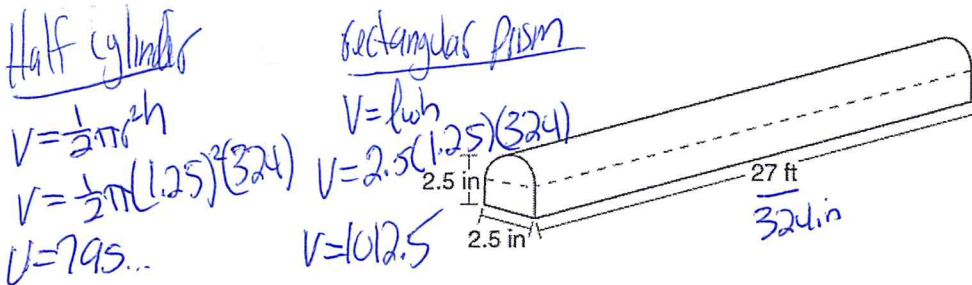
$.8 \text{ km} \cdot \frac{1000 \text{ m}}{1 \text{ km}} = 800 \text{ m}$   
*must convert*

$$V = \pi r^2 h$$

$$V = \pi(1200)^2(800)$$

$$V = 361914737 \text{ m}^3$$

15. A fabricator is hired to make a 27-foot-long solid metal railing for the stairs at the local library. The railing is modeled by the diagram below. The railing is 2.5 inches high and 2.5 inches wide and is comprised of a rectangular prism and a half-cylinder.



Half cylinder  
 $V = \frac{1}{2} \pi r^2 h$   
 $V = \frac{1}{2} \pi (2.5)^2 (324)$   
 $V = 795...$

Rectangular prism  
 $V = lwh$   
 $V = 2.5(2.5)(324)$   
 $V = 1012.5$

$27 \text{ ft} \cdot \frac{12 \text{ in}}{1 \text{ ft}}$   
 $27(12) = 324$

How much metal, to the nearest cubic inch, will the railing contain?

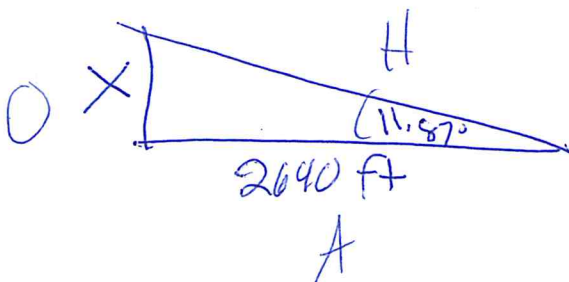
- 1) 151
- 2) 795
- 3) 1808
- 4) 2025

$795 + 1012.5 = 1807.5$

16. From a point on the ground one-half mile from the base of a historic monument, the angle of elevation to its top is  $11.87^\circ$ . To the nearest foot, what is the height of the monument?

- 1) 543
- 2) 555
- 3) 1086
- 4) 1110

$.5 \text{ mi} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}} = 2640 \text{ ft}$



SOH CAH TOA  
 $\tan \theta = \frac{O}{A}$   
 $\tan 11.87 = \frac{x}{2640}$   
 $x = 2102$

$x = 554.8917314$   
 $x = 555$