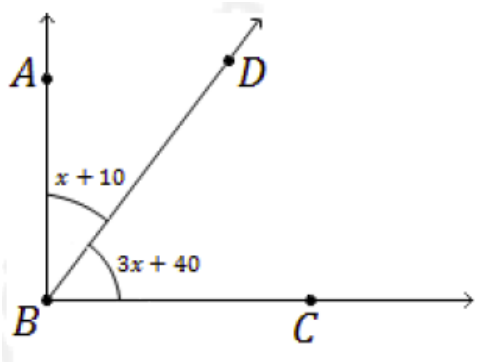
Math 116: Written Homework Set 3

This assignment is due on Wednesday, September 28th in class. Show all work where possible! Answers magically appearing will receive no credit.

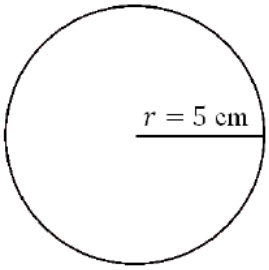
1. If AB = 20 and BC is 2 times longer than AB in the diagram below, find AC.

2. Determine the following angles.
   a. The complement of 54^o.
   b. The supplement of 65^o.

3. Given that $< ABC$ is a right angle in the diagram below, find the measure of $< ABD$ and $< CBD$.

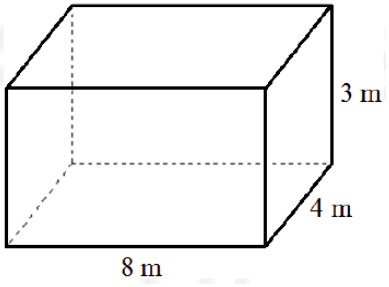


4. Find the circumference and area of the following circle.



5. Your living room floor is roughly 18 feet by 16 feet, and you want to put down hardwood floors. Find the approximate cost (not including labor) to put down hardwood flooring in your living room if the cost of the flooring is $5.00 per square foot.

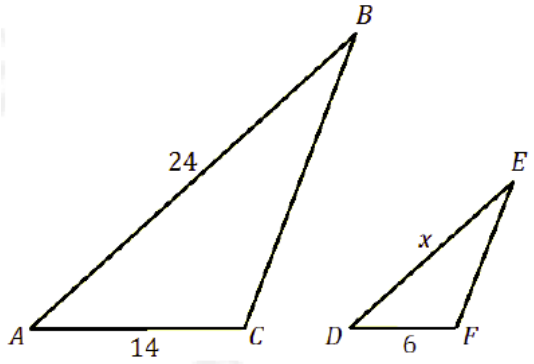
6. Find <u>both</u> the volume and surface area of the following rectangular solid.



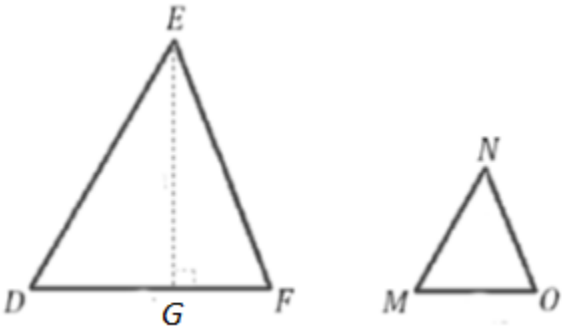
7. Suppose you have a cylindrical hot water heater with a height of 5 feet and a radius of 1 foot. How much water can it hold in cubic feet?

8. Solve the proportion $\frac{6}{x+2} = \frac{12}{22}$ for x

9. Find the value of x in the following diagram given that triangles ΔABC and ΔDEF are similar.



10. Given that triangles ΔDEF and ΔMNO are similar, of DF = 57 cm, EG = 36 cm, and MO = 19 cm, find the area of ΔMNO.



11. John is 6 feet tall. One afternoon, he cast a shadow 16 feet long. At the same time, a maple tree in John's yard cast a 64-foot shadow. How tall is John's maple tree?

Selected Answers

1. 60
2. a. 36^o
3. a. $m < ABD = 20^o$
4. Area = $25\pi\ cm^2$
6. Volume = 96 m^3
8. $x = 9$
9. $x = \frac{72}{7} \approx 10.3$
11. 24 ft