Exam 1 – Part II: Chapters 1, 2, and 3 **NAME _____**
Math 97, Geometry, Section 3385
Fall 2009: Michael Orr
100 points total (30 pts Part I, 70 pts Part II)
Show all work to receive full credit. You may use a calculator. CHECK YOUR WORK!!!!

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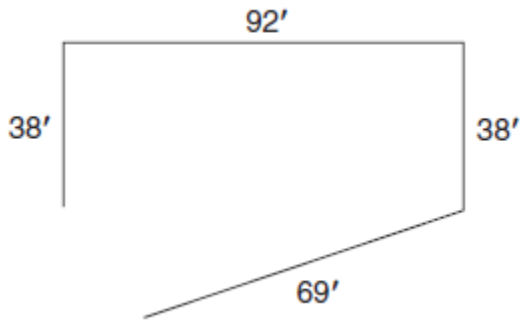
1. (10 pts) A water system must be installed in a field as shown below. If the pipe comes in both 8-foot and 15-foot lengths, and cannot be cut, how many pipes of each length will be required?



2. (3 pts) Use inductive reasoning to 6^{th}, 7^{th}, and 12^{th} terms of the following sequence:

4, 7, 11, 16, 22, …

6^{th} = _____

7^{th} = _____

12^{th} = _____

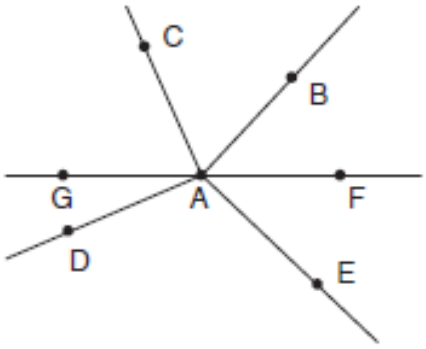
3. (3 pts each) Determine the missing numbers in each of the following Fibonacci-type sequences:

A. 1, 4, 5, 9, _____, _____, _____

B. 2, _____, 6, _____, 16, _____

C. 3, _____, _____, _____, 27

4. (8 pts) In the figure, $m\angle FAB = 30^\circ$, $m\angle CAB = 66^\circ$, $m\angle GAD = 23^\circ$, $\overline{BA} \perp \overline{EA}$, and G and F are collinear.



A. What type of angle is $\angle AFB$?

B. Are $\angle FAC$ and $\angle BAG$ supplementary?

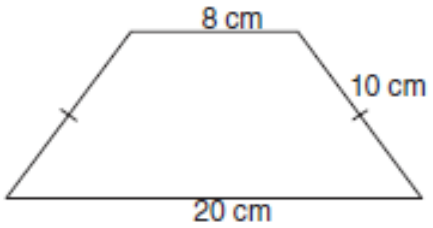
C. What is $m\angle DAE$?

5. (6 pts) Convert 29.11° to degrees and minutes.

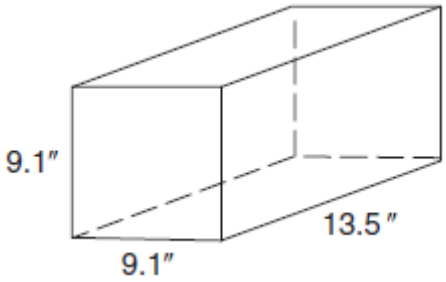
6. (10 pts) Water is flowing along a stream at the rate of 1200 gallons per minute. What is the rate in liters per second? Round to the nearest hundredth. (Remember there are 4 quarts in a gallon and 1.057 quarts in a liter).

7. (8 pts) A large rectangular flower planter is 4 ft by 1.5 ft by 9 ft. Potting soil comes in ½ cubic yard bags. How many bags of potting soil are needed to completely fill the planter? (3 ft = 1 yard)

8. (8 pts) Determine the area of the figure shown:



9. (8 pts) What is the surface area of the rectangular prism shown below?



EXTRA CREDIT ON BACK

BONUS *(total of* ***10 e****xtra points each)*

A cylindrical cooling sleeve for a beverage is filled with liquid for freezing. The sleeve is 1 cm thick; the inner radius of the sleeve is 4 cm, the outer radius of the sleeve is 5 cm, and the height of the sleeve is 10 cm. How much liquid is needed? Round to the nearest hundredth.