

EXAM 3
Math 152
December 15, 2009

Name _____

You must show all your work. Partial credit will be given.

1. Convert each of the following quantities.

$$24 \text{ in.} = \underline{\hspace{2cm}} \text{ ft.}$$

$$230 \text{ mm} = \underline{\hspace{2cm}} \text{ dm}$$

$$7 \text{ yds} = \underline{\hspace{2cm}} \text{ ft}$$

$$610 \text{ dam}^2 = \underline{\hspace{2cm}} \text{ hm}^2$$

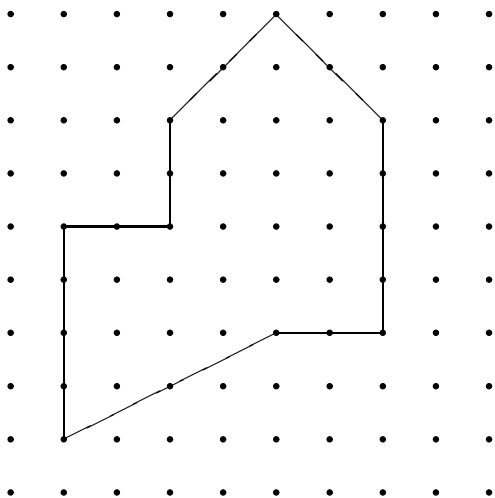
$$5 \text{ L} = \underline{\hspace{2cm}} \text{ cL}$$

$$1 \text{ m}^3 = \underline{\hspace{2cm}} \text{ cm}^3$$

$$2 \text{ ft}^2 = \underline{\hspace{2cm}} \text{ in}^2$$

2. A rectangular container measuring 2 feet by 1.5 feet by 9 inches is filled with water. How much does the water weigh? (1 gallon is 231 cubic inches and each gallon weighs 8.3 pounds)

3. Assume the grid is spaced one unit apart in each row and column. Find the area of the following figure.

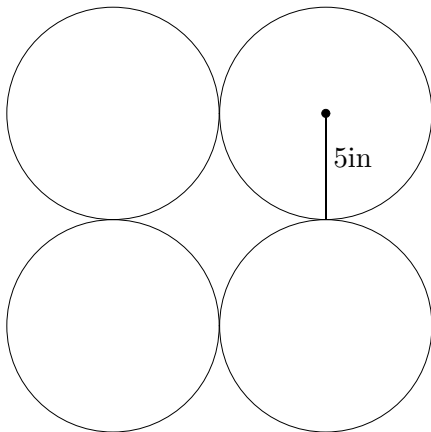


4. Glaciers in coastal Greenland are relatively fast moving and have been observed to flow at a rate of 20 m per day. How long will it take for such a glacier to move one kilometer?

5. A ladder is leaning against a building. If the ladder reaches 20 feet high on the building and the base of the ladder is 15 feet away from the bottom of the building, how long is the ladder?

6. Find the area of an equilateral triangle whose sides all have length 6 units.

7. Find the area of the area contained between the four circles in the picture below



8. A room measures 4 meters by 7 meters and the ceiling is 3 meters high. A liter of paint covers 20 square meters. How many liters of paint will it take to cover the walls and ceiling (but not the floor) of this room?
9. Suppose we have two triangles each with angles of 100° , 30° , and 50° . Are the triangles as a whole forced to be congruent?
10. Draw two noncongruent quadrilaterals each of which has two sides which are equal (say 3 units) and two other sides which are equal but not the same as the first two (say 5 units). (The 3 and the 5 are arbitrary you may use any length you wish that follows the pattern of two equal and two (different) equal sides.)