Name:_____**Date:**_____**Period:**_____

Chapter 5 Tiered Problems   **Show all Work!**

Standards

- B.G.C.A.1 Apply a variety of strategies to determine the area and circumference of circles after identifying necessary information.
- B.G.GMD.A.1 Use relationships involving area, perimeter, and volume of geometric figures to compute another measure.
- B.G.MG.A.1 Use appropriate technology to find the mathematical model for a set of non-linear data.
- B.G.GMD.A.3 Apply a variety of strategies using relationships between perimeter, area, and volume to calculate desired measures in composite figures (i.e., combinations of basic figures).
- B.G.MG.A.2 Solve problems involving surface area and volume in real-world context.

Tier 1 (up to 60 pts) Complete #1-3 Do not move to tier 2 if you have not completed tier 1.
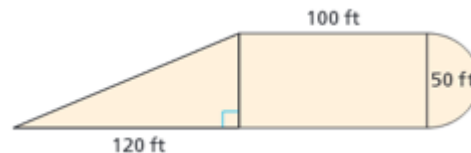
Tier 2 (up to 75 pts) Complete #1-4 Do not move to tier 3 if you have not completed tier 2.

Tier 3 (up to 100 points) Complete #1-5.

1. (20 points) The total area of the state of Tennessee is 109,247 square miles. The area of Nashville is 1,362 square miles. If a meteor were to land somewhere in the state, estimate the probability to the nearest hundredth of a percent that it would land within the city limits of the capital.

2. (30 points) To remove trees from the grounds of ancient ruins, the project site has been divided into three sections-a rectangle, a triangle and a half circle.

   a. Find the area in square feet for each section.

   100 ft

   50 ft

   120 ft

   b. Five workers are paid $20 per hour each to remove the trees. They can clear 100 ft^2 each hour. How long will it take for the workers to remove the trees in the triangular section?

   c. What is the cost of clearing the triangular section?

3. (10 points) A rectangular prism has a volume of 382.5 in^3 and a base area of 45 in^2. What is the height of the prism?

4. (15 points) A container is made by placing a triangular pyramid with a base area of 12 cm^2 and a height of 8 cm on top of a rectangular prism with a height of 6 cm, a length of 8 cm, and a width of 4 cm. What is the volume of the container?

5. (25 points) Nivea lost her cell phone somewhere in her 7500 square foot house. Her mother tells her there is a 16% chance that the phone is in the game room.

   a. What is the area of the game room?

   b. Based on area, is the phone more likely to be in the game room, or in her 20 ft by 30 ft bedroom? Explain your answer.