Geometry Word Problem Wrap Up #8 Show all work. Round to the nearest hundredth

Name: _____ Date: _____

1. A quilter is cutting along the diagonal of a rectangular piece of fabric ¾ yard wide by 1 yard long. What will be the length of the cut?
2. A pilot flies a plane south and then 600 miles west, where she lands the plane. How far south did the pilot fly the plane if she lands 610 miles from her starting point?
3. A builder divides a rectangular plot of land in half along the diagonal. If the plot is ½ mile wide and the diagonal measures 1 3/10 miles long, what is the length of the plot?
4. A carpenter is building rectangular walls for a room addition. The width of a section of wall is two times the height **h.** Each section has a brace that connects two opposite corners of the section. What is a simplified expression for the length of a brace?
5. An area rug is shaped like a golden rectangle. Its length is 8 ft. What is the rug's width? Write your answer in simplified radical form and rounded to the nearest tenth of a foot
6. The motion of a pendulum can be modeled by $t = 2\sqrt{\frac{x}{3.3}}$ where t is the time in seconds for one complete swing and x is the length of the pendulum in feet. If the pendulum takes 2 seconds to complete one swing, how long is the pendulum? Round to the nearest hundredth of a foot.
7. The length r of the radius of a sphere is given by $r = \sqrt{\frac{SA}{4\pi}}$ where SA represents the sphere's surface area. If a sphere has a surface area of 276 cm^2, what is the length of its radius? Use π = 3.14 Round to the nearest hundredth.
8. The distance d in feet that it takes an automobile to stop if it is traveling S miles per hour is given by $S = \sqrt{21d}$. Find the distance it would take an automobile traveling 45 miles per hour to stop. Round your answer to the nearest tenth of a foot.
9. The distance **d** a car skids in feet on dry asphalt is modeled by $s = \sqrt{21d}$, where s is the speed of the car in miles per hour upon sudden braking. What are the domain and range of the function? Graph the function. What braking distance will indicate a speed equal to or greater than 56 miles per hour?
10. Jack bought a circular rug that is 8 feet in diameter. The rug has a blue border and a red circular center that is 6 feet in diameter. What is the area of the blue border?
11. Lisa has a water container shaped like a cone that is 7 inches high and has a radius of 3 inches. She is using this water container to fill a barrel that holds 900 cubic inches of water. How many full cones of water will it take to fill the barrel?
12. The volume of a sphere is 2,400 cubic centimeters. What is the approximate diameter of this sphere?
13. Michael has a barrel in the pasture to keep water for his hours. The barrel is four feet tall with a diameter of 2 feet. What is the volume of the barrel? How many gallons of water will the barrel hold? 1 ft^3 = 7.5 gals.
14. The radius of a cone is 6 meters and the height is 11 meters. What is the volume of the cone? If the radius is doubled how would the volume change?
15. What is the volume of a sphere with a diameter of 10 feet?
16. An ice cream cone has a diameter of 3 inches. The distance from the top of the cone to the point at the bottom is 5 inches. How many cubic inches of ice cream will the cone hold?
17. A company sells snack mix in a cylindrical can. The can has a 5-inch diameter and holds approximately 157 in^3 of snack mix when it is completely full. How tall, to the nearest inch, is the can?
18. A company is going to redesign the cylindrical container it uses to market its product. The volume of the proposed container will be approximately 42.4 cubic inches and the diameter will be 3 inches. What will be the approximate height of the cylinder, rounded to the nearest tenth of an inch?
19. In his garden, Jim is using cone-shaped planters for his hanging plants. Each planter has a diameter of 8 inches and a height of 13 inches. He has 6 planters, and wants to fill each planter ¾ of the way with soil. What is the total volume of soil Jim will need for his hanging plants? Jim also has a rectangular garden bed which is 13 inches high by 5 feet long by 3 feet wide. How much soil will he need in total for his garden?
20. Joel drew two cones on a piece of paper. The larger cone has a diameter of 8 inches and a height of 12 inches. The smaller cone has a radius and height equal to ¼ the size of the larger cone. What is the volume of the smaller cone?