Honors Geometry UNIT 10: REVIEW #2 (WKST 10.12)

 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**QUICK REVIEW OF VOLUME APPLICATIONS.**

1. Our fish gets a new larger fish tank. It is 25 inches by 21 inches by 29 inches.
	1. What is the volume of the fish tank?
	2. If one gallon is the same as 231 cubic inches, how many gallons of distilled water must Sever buy to fill the tank?
2. You are designing a cylindrical container that needs to be 680 cubic inches. The height of the container is going to be 2 feet. What would the diameter of the top and bottom of the cylinder be? Round to the nearest integer.
3. A softball has a diameter of 3.5 inches. A basketball has a diameter of 9.5 inches. How many softballs could fit into a basketball? (think Volume)

**POPULATION DENSITY.**

1. The state of Wyoming is one of our least populated. The 2018 population was 586,107 and the land mass was 97,100 square miles. What was its population density in 2018?
2. In 2018 the state of Oregon (another state with relatively small population) had a population of 4,028,977 with a land mass of 95,997 miles. How much more dense (in terms of population density) is Oregon than Wyoming?
3. A restaurateur wants to open up a sandwich shot in East Cobb. There are 7 existing sandwich shops in East Cobb and the population density of east cobb is 340 people per square mile. What is the ratio (as a percent) of existing sandwich shops to population density?

**Coordinate Proofs**.

What formulas/procedures would prove the following? Check all that apply.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Slope | Distance | Midpoint | P-thag. |
| Prove a quad is a parallelogram |  |  |  |  |
| Prove a trapezoid is isosceles |  |  |  |  |
| Prove a rhombus is a square |  |  |  |  |
| Prove a triangle is scalene |  |  |  |  |
| Show if a point is in, on or outside a circle |  |  |  |  |
| Prove that a triangle is not right |  |  |  |  |
| Prove a pentagon is regular |  |  |  |  |
| Prove a parallelogram is a rectangle |  |  |  |  |
| Prove a radius bisects a chord of a circle |  |  |  |  |
| Prove a triangle is acute |  |  |  |  |

Solve the following **on your own paper**. *Be organized. I can’t grade what I cannot follow/read.*

7. Prove that *A*(1,1), *B*(4,4), *C*(6,2) are the vertices of a right triangle

8. Prove that parallelogram *A*(-3,2), *B*(-2,6), *C*(2,7)and *D*(1,3) is a rhombus *and NOT a square.*

9. Prove that *A*(4,-1), *B*(5,6), *C*(1,3) is an isosceles right triangle.

10. Prove that the quadrilateral with the coordinates L(-2,3), M(4,3), N(2,-2) and O(-4,-2) is a parallelogram.

11. Show where the point (3,2) is (on/outside or inside the circle) if the circle has equation  (need to find center and radius)

12. Points A(-6, 10) and B(1, 24) are endpoints of a line segment. What point C would divide the segment into a ratio of 3:4?