READY, SET, GO! Name Period Date

READY

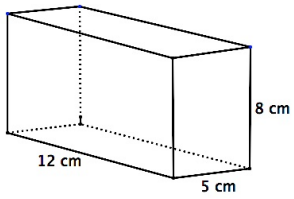
Topic: Comparing perimeter, area and volume

Solve each of the following problems. Make certain you label the units on each of your answers.

1. Calculate the perimeter of a rectangle that measures 5 cm by 12 cm.

2. Calculate the area of the same rectangle.

3. Calculate the volume of a rectangular box that measures 5 cm by 12 cm. and is 8 cm. deep.



4. Look back at problems 1 – 3. Explain how the units change for each answer.

5. Calculate the surface area for the box in problem 3. Assume it does NOT have a cover on top. Identify the units for the surface area. How do you know your units are correct?

6. Calculate the circumference of a circle if the radius measures 8 inches. (Use π = 3.14)

7. Calculate the area of the circle in problem 6.

8. Calculate the volume of a ball with a diameter of 16 inches. $\left(V = \frac{4}{3}\pi r^3\right)$

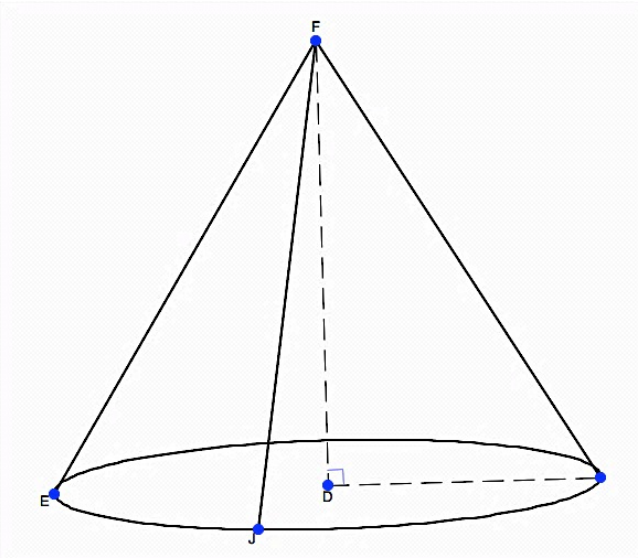
9. Calculate the surface area of the ball in problem 8. $(SA = 4\pi r^2)$

10. If a measurement were given, could you know if it represented a perimeter, an area, or a volume? Explain.

11. In the problems above, which type of measurement would be considered a "linear measurement?"

SET

Topic: Examining the cross sections of a cone



Consider the intersection of a plane and a cone.

12. If the plane were parallel to the base of the cone, what would be the shape of the cross-section?
Can think of 2 possibilities? Explain.

13. How would a plane need to intersect the cone so that it would create a parabola?

14. Describe how the plane would need to intersect the cone in order to get a cross-section that is a triangle. Would the triangle be scalene, isosceles, or equilateral? Explain.

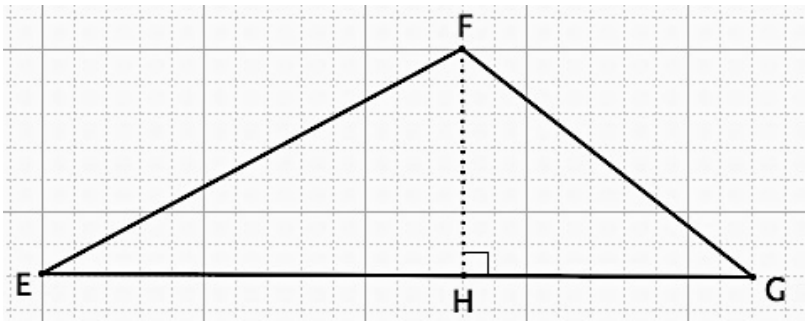
15. Would it be possible for the intersection of a plane and a cone to be a line? Explain.

GO

Topic: Finding the area of a triangle

Calculate the area of triangle EFG in each exercise below.

16.



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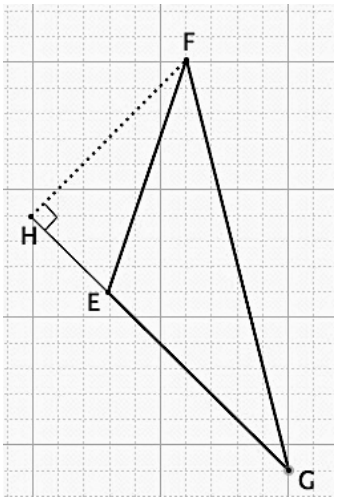
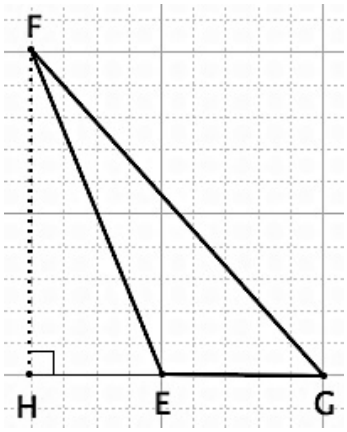
17.



18.



19. Calculate the areas of $\Delta EFG, \Delta EOG, and\ \Delta EMG$. Justify your answers.