

**Simplify all answers and show your work!**

1. There are 180 degrees in a triangle.
2. There are 360 degrees in a circle.
3. There are 180 degrees in a line.
4. A triangle with 3 equal side lengths is called equilateral.
5. What is the vertex of  $\angle HRL$ ? R
6. An angle with a measure of  $90^\circ$  is a right angle.
7. Two lines in a plane that do not cross are called parallel lines.
8. Perpendicular lines cross in a 90 degree angle.
9. Write in scientific notation: 256,000,000,000
10. Write in engineering notation: 0.0000000092

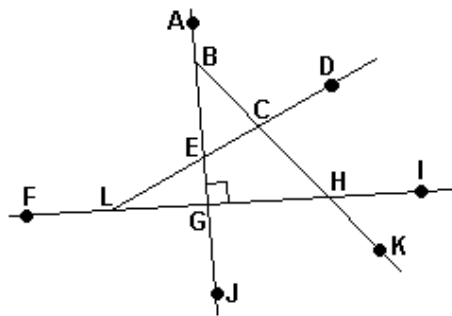
$2.56 \times 10^{11}$

$9.2 \times 10^{-9}$

11. Write using the correct metric prefix: 38,000,000,000 meters
12. 5.1 mL = 0.0051 L
13. 8.97 m = 897 cm

38 Gigameters

Refer to the figure below for problems 14 – 19.



14. Name an acute angle. \_\_\_\_\_
15. Name an obtuse angle. \_\_\_\_\_
16. Name a right triangle. BHG
17. What is the measure of angle HGJ?

Answers vary.

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$90^\circ$

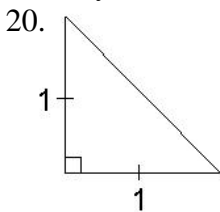
If the measure of angle BHG is  $48^\circ$ :

18. find the measure of angle BHI.
19. find the measure of angle HBG.

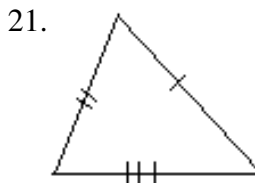
$132^\circ$

$42^\circ$

Classify the following triangles as a) acute, right, or obtuse and b) scalene, isosceles, or equilateral.



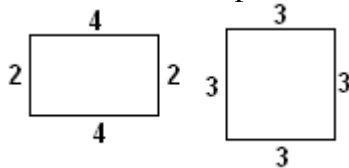
- a) right
- b) isosceles



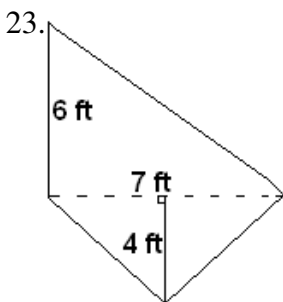
- a) acute
- b) scalene

22. Draw an example of two figures that have the same perimeter but different areas.

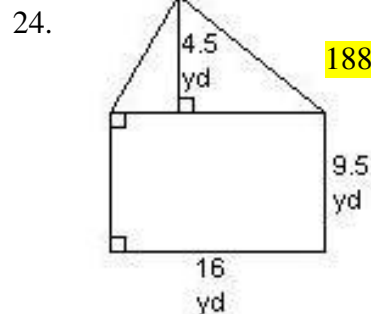
Answers vary. Example:



Find the areas of the figures below:

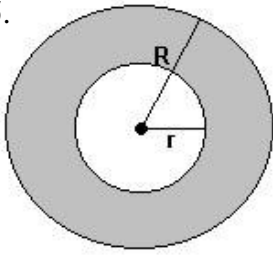


$35 \text{ ft}^2$



$188 \text{ yd}^2$

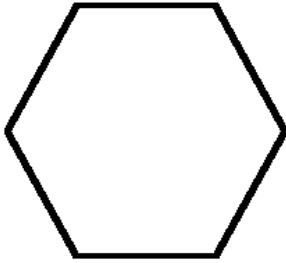
25.



Find the cost to asphalt a circular racetrack if asphalt costs \$80 per 100 ft<sup>2</sup> where the outer radius (R) is 150 feet and the inner radius (r) is 90 feet.

\$36,191.15

26. The figure below is a regular hexagon.



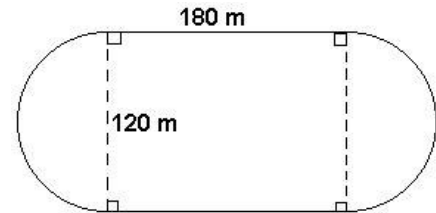
a) Find the sum of the interior angles.

720°

b) Find the measure of one interior angle.

120°

27. Find the perimeter of the figure below.



≈ 737 m

28. A one-story building is 210 ft by 160 ft. If a square patio with sides 25 ft occupies the center of the building, how much area remains for offices?

32,975 ft<sup>2</sup>

29. The shape of a patio is trapezoidal with a height of 9 ft and bases of 19 ft and 13 ft. What is the cost of outdoor carpeting to cover the patio if the carpeting costs \$6.50 per ft<sup>2</sup>?

\$936.00

30. A room measures 14 ft by 30 ft and the ceiling is 12 ft above the floor. There is one door, which is 3 ft by 7 ft. A gallon of paint will cover 150 ft<sup>2</sup>. How many gallons of paint are needed to paint the room (including the ceiling and not including the door). Round your answer up to the next whole number.

10 gallons