Pre-Test
Measurement

1. 2.32 m × 4.51 m = 10.4632 m^2 (m is the abbreviation for meters).
a. Round this result to the nearest hundredth of a meter.
b. Round this result to the nearest tenth of a meter.

2. The height of a building was reported to be 252 m.
a. Find the absolute error in this measurement.
b. Find the relative error in this measurement.

3. a. Convert 250 millimeters to meters.
b. Convert 82 meters to kilometers.

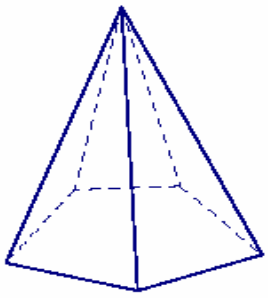
4. a. Convert 3.2 yards to inches.
b. Convert 0.25 miles to yards.

5. Convert 2 yards to meters. [Recall 1 in = 2.54 cm.]

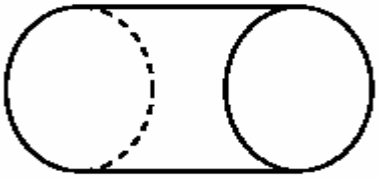
6. Draw a hexagonal pyramid. Then give the number of faces (including the base), edges, lateral faces, lateral edges, and vertices.

7. For each of the solids below, draw two cross sections. One cross section should be parallel to a base, and the other perpendicular to a base. Then identify each of the cross sections with a name (regular pentagon, triangle, rectangle, circle, etc.)

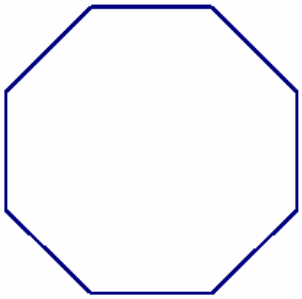
a.



b.



8. Sketch a solid that could have the given cross sections.
Cross section parallel to a base: Cross section perpendicular to a base:



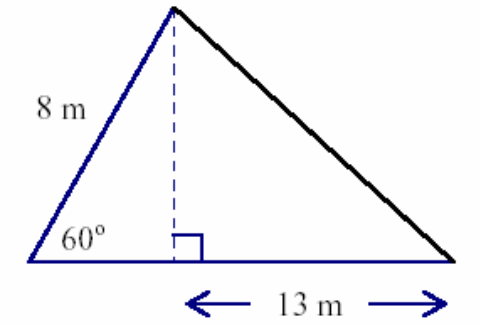
9. What is the area of an equilateral triangle whose one side length is 6 in?

10. A rectangle has width $(x+3)$ ft, length $(x+7)$ ft, and perimeter 104 ft,
a. What is the width of the rectangle?
b. What is the length of the rectangle?

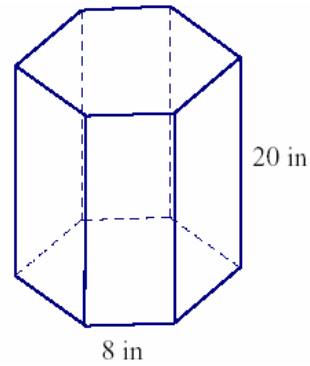
11. A rectangle has width $(x-2)$ ft, length $(x+6)$ ft, and area 9 ft^2,
a. What is the width of the rectangle?
b. What is the length of the rectangle?

12. A trapezoid has bases 8 in and 12 in and its area is 28 in^2 .What is the height of the trapezoid?

13. Find the area of the following triangle:



14. The figure given below is a regular right prism. Find the volume, the lateral area and the total surface area.



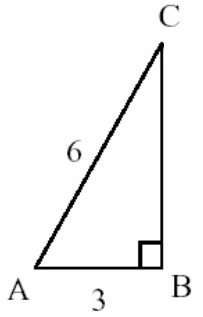
15. If a rectangular prism with a square base has a height of 7 m and a volume of 175 m^3,
a. What are the dimensions of the square base?
b. What is the lateral surface area?
c. What is the total surface area?

16. The total surface area of a cube is 96 m^2. Find the length of an edge.

17. If a right circular cylinder has a height of 5 in and a volume of 245π in^3,
a. Find the radius of this cylinder.
b. Find the lateral area.
c. Find the total surface area.

18. A right circular cone has a diameter of 18 in and a volume of 108π in^3 .
a. What is the height of the cone?
b. What is the slant height?
c. What is the total surface area?

19. Find the indicated trigonometric ratios for the triangle below. Write all answers in the simplest radical form.



a. sin (*A*) b. csc (*C*) c. tan(*C*)
d. cot (*A*) e. cos(*A*) f. sec(*C*)

20. A girl is flying a kite and lets out 250 feet of string. If she sights the kite at a 60^0 angle of elevation, what is the height of the kite? (Disregard the height of the girl in your calculations; do not evaluate radicals)