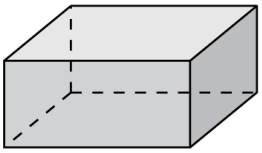
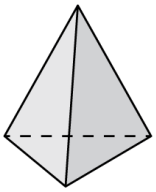
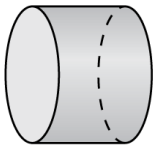
Name_____ Date_____

11.1 & 11.2 – Exploring Solids & Surface Area of Prisms & Pyramids

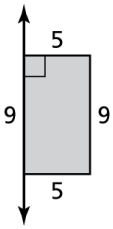
Tell whether the solid is a polyhedron. Name the type of solid.

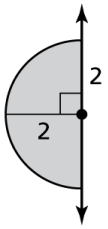
1) 

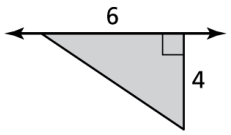
2) 

3) 

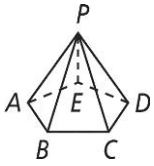
Sketch the solid produced by rotating the figure around the given axis. Then identify and describe the solid.

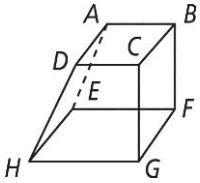
4) 

5) 

6) 

For each polyhedron, how many vertices, edges, and faces are there?

7) 

8) 

For each polyhedron, use Euler's Formula to find the missing number.

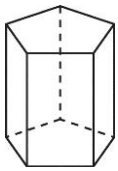
9) Faces: _____ Edges: 12 Vertices: 8

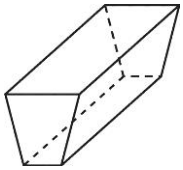
10) Faces: 10 Edges: 18 Vertices: _____

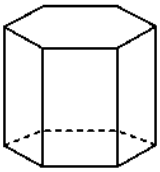
11) Faces: 8 Edges: _____ Vertices: 6

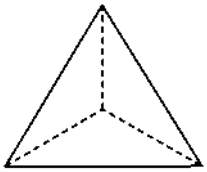
For each polyhedron:

a) Find the number of vertices, edges, and faces for each.
b) Does each follow Euler's formula.
c) Draw a net for the figure.

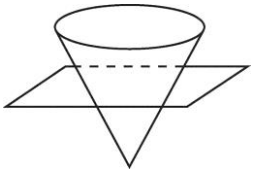
12) 

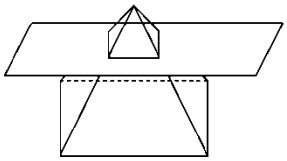
13) 

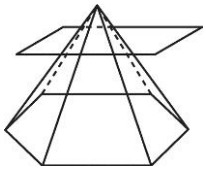
14) 

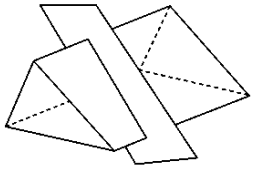
15) 

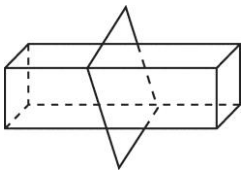
Describe each cross section that the plane would make with the three-dimensional figure.

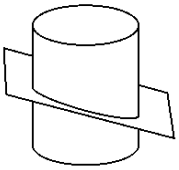
16) 

17) 

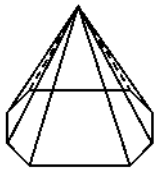
18) 

19) 

20) 

21) 

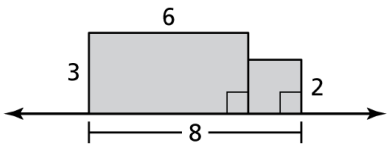
22) What is the cross section formed by a plane containing a vertical line of symmetry for the figure at the right?



23) Can a polyhedron have 19 faces, 34 edges, and 18 vertices? Explain.

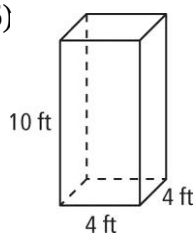
24) Is a cone a polyhedron? Explain.

25) Sketch the composite solid produced by rotating the composite figure around the given axis. Then identify and describe the composite solid.

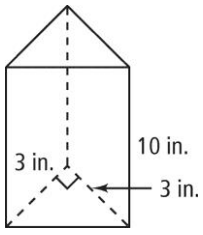


Find the surface area of each prism. Round to the nearest 0.1 if necessary.

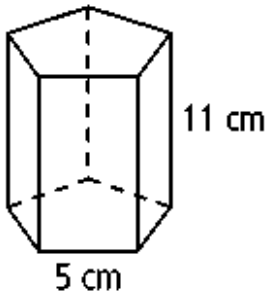
26)



27)



28) a) Classify the prism at the right.



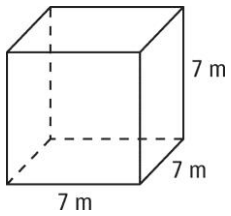
b) Find the lateral area of the prism.

c) The bases are regular pentagons. The area of each is 43 cm^2. Find the sum of their areas.

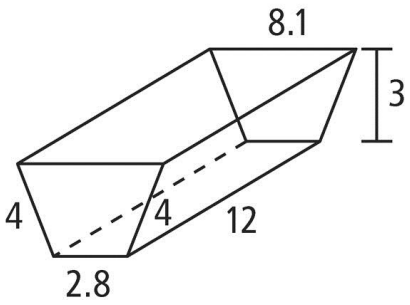
d) Find the total surface area of the prism

Find the surface area of each prism. Round to the nearest 0.1 if necessary.

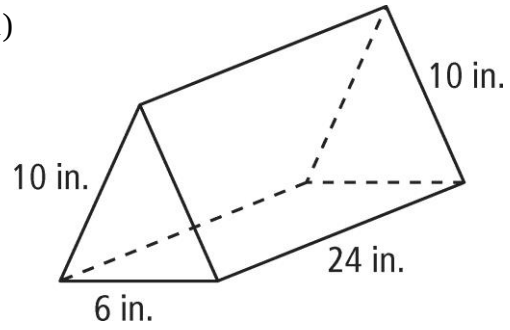
29)



30)



31)

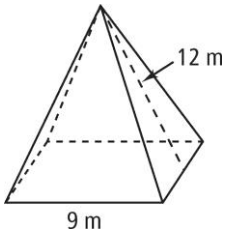


32) A box of cereal measures 8 in. wide, 11 in. high, and 2 in. deep. If all surfaces are made of cardboard and the total amount of overlapping cardboard in the box is 7 in^2, how much cardboard is used to make the cereal box?

33) An artist creates a right prism whose bases are regular decagons. He wants to paint the lateral surfaces of the prism. One can of paint can cover 32 square feet. How many cans of paint must he buy if the height of the prism is 11 ft and the length of each side of the decagon is 2.4 ft? The area of a base is approximately 89 ft^2.

Find the surface area of each pyramid to the nearest 0.1.

34)



35)