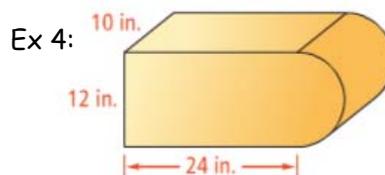
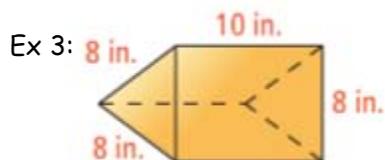


10.3 Volumes of Prisms and Cylinders

Volume:Cavalieri's Principle:Volume of a Prism

B =

h =

Volume of a Cylinder

Mr. Brust almost made the Olympics as a swimmer (he actually lost to Michael Phelps in his first Olympic trials). During that race Mr. Brust claims he lost because he was trying to figure out the volume of the pool during the race. Help the man out and find out how much water can be held in the pool. Its 50 meters long, 25 meters wide and 2 meters deep.

You try...find the volume to the nearest whole.

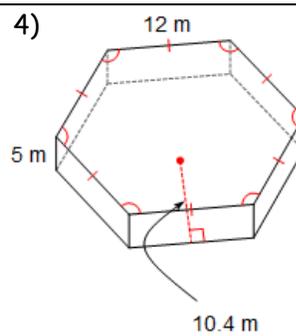
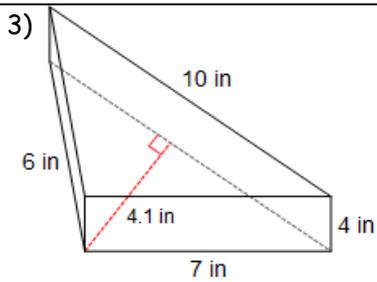
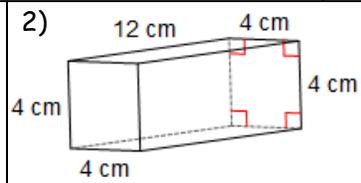
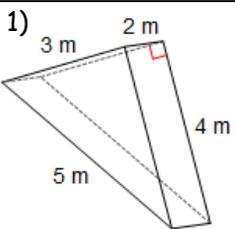
1)

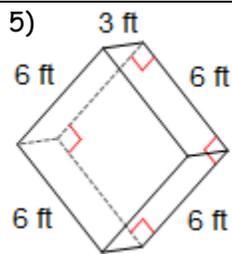
2)

Summary:

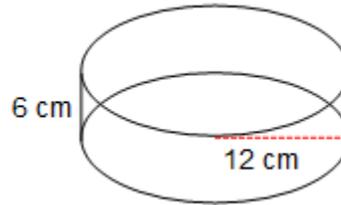
10.3 Practice Problems

Directions: Find the volume of each figure. Round to the nearest tenth if necessary.

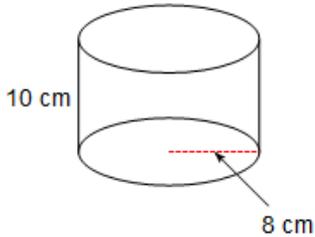




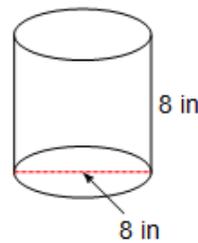
6) Round to nearest tenth and leave in terms of π .



7) Round to nearest tenth and leave in terms of π .



8) Round to nearest tenth and leave in terms of π .



Directions: Find the missing length.

9) The volume of a cylinder is $135\pi \text{ cm}^3$. The height of the cylinder is 15 cm. What is the radius of the base of the cylinder?

10) The volume of a cylinder is $600\pi \text{ cm}^3$. The diameter of a base of the cylinder is 10 cm. What is the height of the cylinder?

Algebra Review

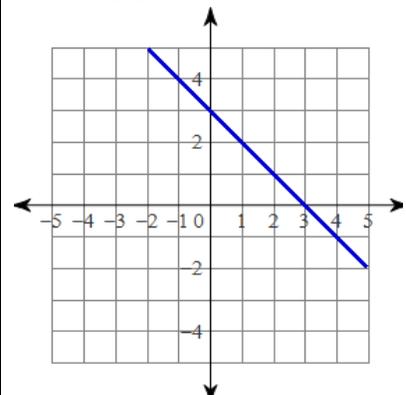
Solve:

$$8r - 12 > 7(6 + 5r)$$

Solve:

$$33 + 4x < 4(x + 7) + 5$$

Write the equation of the line for the following graph.



Factor Completely:

$$54n^2 + 552n + 120$$

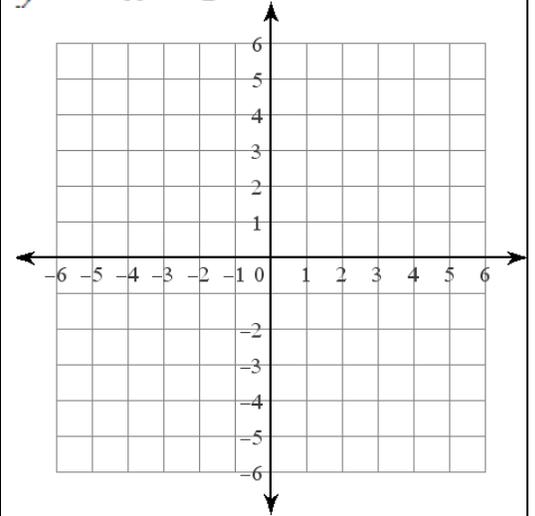
Factor Completely:

$$27v^2 - 90v + 75$$

Solve by graphing:

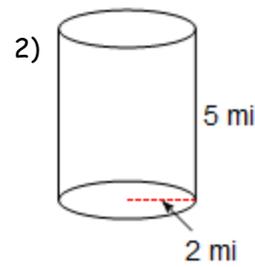
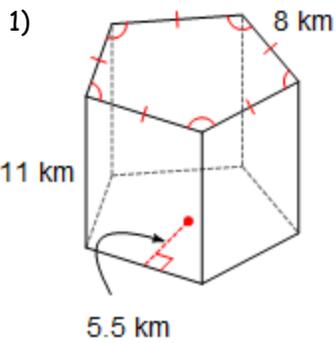
$$y = -8x + 4$$

$$y = -x - 3$$

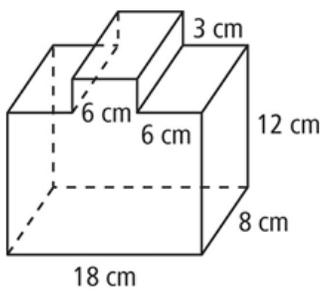


10.3 APPLICATION and EXTENSION

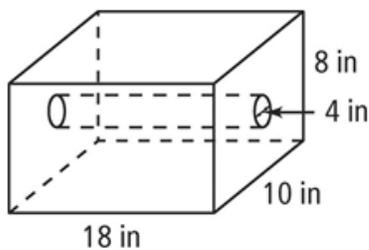
Directions: Find the volume to the nearest tenth.



3) Draw the two composite shapes then find the volume.



4) Draw the two composite shapes then find the volume.



5) The Pentagon is headquarters for the Department of Defense in the United States. It's a shaped, oddly enough, like a regular pentagon that has another, smaller, regular shaped pentagon missing in the middle. The perimeter of the outside is 4,605 feet and it is 77 feet high and has an apothem of 634 feet. The perimeter of the inside pentagon is 1,320 feet with an apothem of 182 feet. What is the volume that the Pentagon holds?



6) Mr. Kelly is a dairy farmer at heart. He has a huge red barn in his yard that holds hay for all his cows. Mr. Kelly was "bragging" that he could put hay in the barn in November and feed his cows for a whole year. Mr. Brust who fancies himself a bit of a know-it-all tells him that is impossible. Brust "claims" that dairy cows need 150 feet^3 of hay a year and that the barn won't contain enough hay for Mr. Kelly's 215 cows. The height of the side walls on his barn are 20 feet, its 40 feet long, 30 feet wide and from the vertex of the roof its 35 feet tall.

Who is right? How many cows could Mr. Kelly's barn feed for one year?

