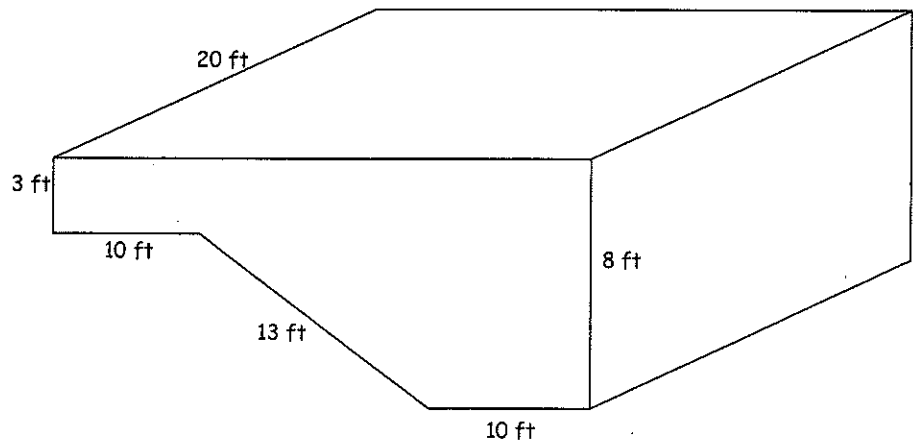


### Volume and Area review

1. A right triangle, 5 in. x 12 in. x 13 in. is revolved to create a solid. Find the volume if it is revolved about the short leg. Find the volume if it is revolved about the long leg. Which one has the greater volume?
2. The two water pipes of same length have inside diameters of 6 cm and 8 cm. These two pipes are replaced by a single pipe of the same length which has the same capacity as the smaller pipes combined. What is the inside diameter of the new pipe?
3. A landscape design specifies that topsoil to a depth of 4 in. be spread over a field that is 76 yd by 32 yd. How many cubic yards of topsoil should be ordered?
4. A 4x7 rectangle can be rotated about the long side to generate a cylinder. It also can be rotated about the short side to generate a cylinder. Find the ratio of the volumes of these cylinders.

5. Which holds more, a cone-shaped drinking cup with 6 in base diameter and 6 in height or a cylindrical drinking cup 4 in diameter base and 4 in height?

6. How long will it take to fill the pool with a garden hose that has a flow rate of 5 gal/min.?  
 Note: 1 gallon = 7.5 ft<sup>3</sup>?



Answers:

1. The one with a height of 5 in has a greater volume ( $140\pi$  in<sup>3</sup> more)
2. 10 cm
3.  $270\frac{2}{9}$  cubic yards
4. revolve about the 7 and the volume is  $112\pi$   
 revolve about the 4 and the volume is  $196\pi$
5. cone
6. 5280 minutes or 88 hours