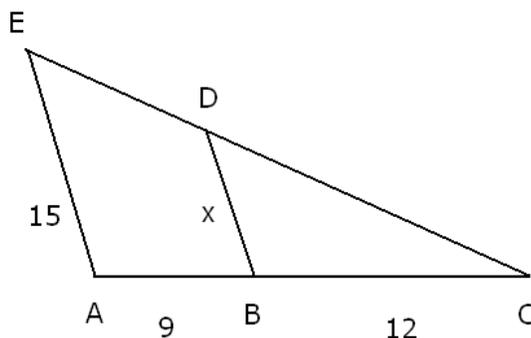
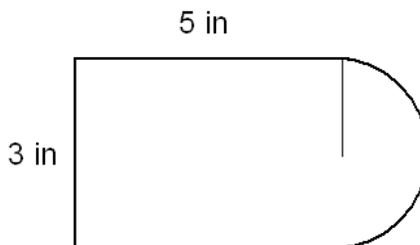


1. Find x if the triangles ACE and BCD are similar.



2. The height of a solid is 4 in. Its base is the figure shown on the picture below. Find the volume of the solid.



3. Find the present value of \$4000, 20 years from now. Assume a compound annual interest rate of 5%, compounded continuously.
4. We wish to buy a car for \$4000. The dealership informs us that they have a finance plan of a down payment of \$400 and 6% APR for 36 months. Find the monthly payment under this plan.
5. We wish to buy a car for \$4000. The dealership informs us that they have a finance plan of a down payment of \$350 and 18 monthly payments of \$210.89. What is the APR that the dealership charges?
6. We have 12 marbles in a bag, 5 red, 4 blue, and 3 yellow. We pull two marbles, without replacement. Find the probability of each of the following events.
- We pull a yellow and a blue marble.
 - We pull no red marbles.
 - We pull two marbles of the same color.
 - We pull two marbles of different colors.
 - We pull at least one blue marble.
7. We have 12 marbles in a bag, 5 red, 4 blue, and 3 yellow. We pull two marbles, with replacement. Find the probability of each of the following events.
- We pull a yellow and a blue marble.
 - We pull no red marbles.

- (c) We pull two marbles of the same color.
 - (d) We pull two marbles of different colors.
 - (e) We pull at least one blue marble.
8. We pull two cards from $\{1, 2, 3, 4, 5, 6, 7, 8, 9\}$, without replacement. Find the probability that
- (a) The sum of the two numbers pulled is below 6.
 - (b) The difference between the two numbers pulled is 4.
 - (c) The product of the two numbers pulled is odd.
 - (d) The product of the two numbers pulled is even.
 - (e) One of the numbers pulled is 3.