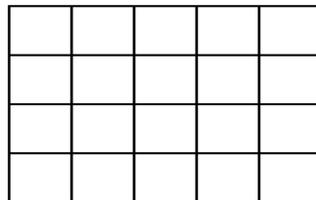
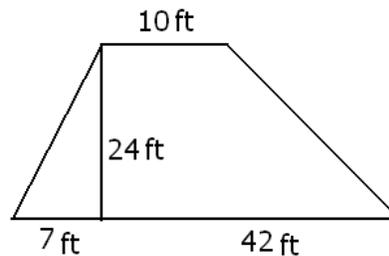


1. Does the triangle with sides 15 in, 18 in, and 20 in have a right angle?
2. Two sides of a right triangle are 24 cm and 25 cm. Find the third side.
3. A club has 25 members. They want to elect their president, vice president, and secretary.
 - (a) How many different outcome of the election is possible?
 - (b) If you are a member, what is the probability that you will be president?
 - (c) If you are a member, what is the probability that you will be president or vice president?
4. A club has 25 members. They want to elect a 4-person committee.
 - (a) How many different outcome of the election is possible?
 - (b) If you are a member, what is the probability that you will be selected to be on the committee?
5. We placed \$10 into a bank account with a simple annual interest rate of 8%. How much money do we have in the account after 200 years?
6. We placed \$10 into a bank account with an annual compound interest rate of 8%. How much money do we have in the account after 200 years if the bank compounds
 - (a) annually
 - (b) semi-annually
 - (c) monthly
 - (d) daily
 - (e) continuously?
7. We roll two dice. What is the probability that
 - (a) the difference between the two numbers rolled is 2?
 - (b) the sum of the two numbers rolled is 11?
8. Consider the picture shown below.



- (a) How many rectangles are there on the picture?
 - (b) How many squares are there on the picture?
9. The value of a stock increased by 120%. Now the stock is worth \$ 1320. How much was it worth before?
10. Find the distance between the points $A(-5, -1)$ and $B(0, 11)$.

11. The population of a town has decreased from 80000 to 76800. What percent of a change does this represent?
12. We borrowed \$ 2500 with an annual simple interest rate of 11%, for three years. We make two partial payments: \$ 800 seven months after the borrowing date, and \$ 500, eighteen months after the borrowing date. How much money do we have to pay at the end of the three years?
13. Consider the trapezoid shown on the picture below.



- (a) Find the perimeter of the trapezoid. Include units in your computation and answer.
 - (b) Find the area of the trapezoid. Include units in your computation and answer.
14. We have 12 marbles in a bag: 7 red, 4 blue, and 1 green. We randomly pull two marbles, with replacement. (Replacement means that before pulling again, we put back what we pulled first.) Find each of the following probabilities.
 - (a) We pull two blue marbles.
 - (b) We pull two green marbles.
 - (c) The two marbles pulled are of the same color.
 - (d) The two marbles pulled are of different color.
 - (e) We pull a red and a green marble. (Careful! Either a red first and then a green, or the other way around.)
 - (f) Neither of the two marbles is red.
 15. We have 12 marbles in a bag: 7 red, 4 blue, and 1 green. We randomly pull two marbles, **without replacement**. (No replacement means that before pulling again, we do NOT put back what we pulled first.) Find each of the following probabilities.
 - (a) We pull two blue marbles.
 - (b) We pull two green marbles.
 - (c) The two marbles pulled are of the same color.
 - (d) The two marbles pulled are of different color.
 - (e) We pull a red and a green marble. (Careful! Either a red first and then a green, or the other way around.)
 - (f) Neither of the two marbles is red.

16. Two students missed the final exam in a chemistry class. Together they went to the professor and told them that they had a flat tire and that's why they couldn't make it to the final exam. The professor gave them a make up exam. He seated the students in separate rooms and gave them the same final exam. The exam had two questions. The first one, for 5 points, was an easy chemistry question. The second question, for 95 points said: "Which tire was flat?" If the students answer the second question randomly, what is the probability that they name the same tire?