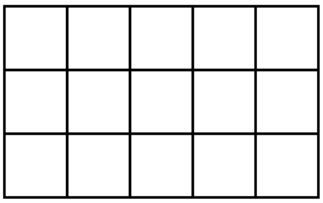
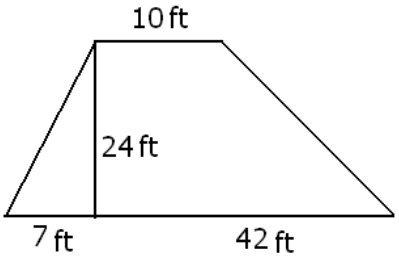
Math 118

Problem Set 12

1. Find $n(X)$ if we know that $n(Y) = 17$, $n(X \cup Y) = 27$, and $n(X \cap Y) = 6$.
2. The height of a cylinder is 4 in. Its base is a circle with radius 3 in. Find its volume.
3. Does the triangle with sides 15 in, 18 in, and 20 in have a right angle?
4. Two sides of a right triangle are 24 cm and 25 cm. Find the third side.
5. A club has 15 members. They want to elect their president, vice president, and secretary. How many different outcome of the election is possible?
6. A club has 15 members. They want to elect a 3 person committee. How many different outcome of the election is possible?
7. How many rectangles are there on the picture below?



8. How many squares are there on the picture above?
9. The price of a book was increased from \$48 to \$57. 60. What percent of a change does this represent?
10. Find the distance between the points $A(-5, -2)$ and $B(-8, 6)$.
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 12%, for three years. How much money do we have to pay back after three years?
13. We borrowed \$3000 with an annual simple interest rate of 12%. We can pay back the money in three months. How much do we have to pay at this time?
14. Find the perimeter and area of the trapezoid shown on the picture.



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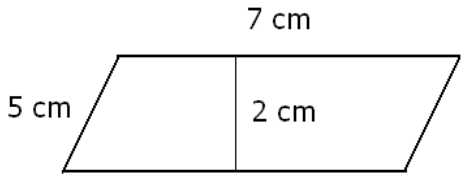
15. Find the volume of a solid if its height is 9 cm and its base is the parallelogram shown on the picture.



16. We borrow \$2000 for two years, with a simple annual interest rate of 9%. After 5 months, we make a partial payment of \$700. How much do we have to pay back at the end of the two years?

17. We borrow \$2000 for a year, with a simple annual interest rate of 9%. After 5 months, we make a partial payment of \$700. After an additional 10 months (that is, 15 months after the start), we make another partial payment of \$800. How much do we have to pay back at the end of the two years?

18. Sally is making \$1500. How much would she be making after a 6% raise?