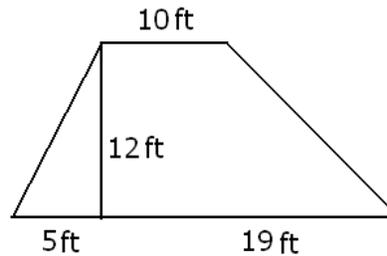1. Let $U = \{1, 2, ..., 80\}$, $A = \{$numbers divisible by 7$\}$, $B = \{$numbers divisible by 5$\}$, and $C = \{$numbers less than 40$\}$.   (A, B, and C are subsets of U.)

    (a) Find $A \cap B$.
    (b) Find $A \setminus B$.
    (c) Find $(B \cap C) \setminus A'$
    (d) How many proper subsets does $A \cap C$ have?

2. We asked 100 students about their transportation to school. 65 uses public transportation, and 72 drives. 55 uses both of these occasionally. How many students drive to school and not use public transportation?

3. Does the triangle with sides 7 in, 24 in, and 25 in have a right angle?

4. Two sides of a right triangle are 20 cm and 29 cm. Find the third side.

5. We pull 6 cards from a standard deck of 52.

    (a) How many ways can we end up with all six cards being spades?
    (b) How many ways can we end up with two aces, three kings, and a queen?

6. Compute $\dbinom{11}{3} + \dbinom{11}{6} - \dbinom{11}{9} - \dbinom{11}{10} =$

7. Find the distance between the points $A(5, -2)$ and $B(10, 10)$.

8. The population of a town has increased from 80000 to 87200. What percent of a change does this represent?

9. We borrowed $2500 with an annual simple interest rate of 12%. How much money do we have to pay back after one year?

10. We borrowed $2500 with an annual simple interest rate of 12%. How much money do we have to pay back after nine months?

11. We borrow $2000 for a year, with a simple annual interest rate of 6%. 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?

12. We borrow $2000 for a year, with a simple annual interest rate of 6%. After 5 months, we make a partial payment of $700. After an additional 9 months (that is, 14 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?

13. Consider the trapezoid shown on the picture.

    (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. Sally got a 6% raise. Now she is making $1537 a month. How much was she making before the raise?

15. A sofa went on a 15% discount. The sale price is $357. Find the original price.