1. Let A be the set of females in our class today, and B be the set of students in our class today who have a calculator with them.
   a) Describe the set $A \cap B$. b) Describe the set $A \cup B$.

2. Let $U = \{1,2,3,4,5,6,7,8,9,10\}$, $A = \{1,2,3,4,5\}$, $B = \{2,4,6,8,10\}$, and $C = \{2,3,5,7\}$. Find each of the following.
   a) $(A \cap \overline{C}) \cap (B \cap \overline{C})$
   b) $(A \cap B) \cap \overline{C}$
   c) $(A \cap B) \cup C$
   d) $A \cap (B \cup C)$
   e) $(A \cap \overline{C}) \cup (B \cap \overline{C})$
   f) $(A \cup B) \cap \overline{C}$

3. True or false? For all sets A and B, $\overline{A \cup B} = \overline{A} \cap \overline{B}$.

4. Let R be the set of all rectangles and S be the set of all squares. Describe the set $R \cap \overline{S}$.

5. How many subsets does $B \cup C$ have? (You don't have to list them.)

6. How many different 6-digit numbers can be formed using the digits 1, 2, 3, 4, 5, and 6, without repetition? (You don't have to list all these numbers.)

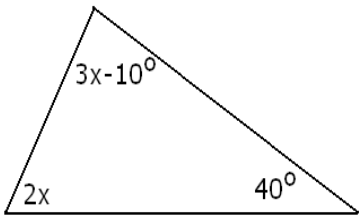
7. List all three-element subsets of $A = \{1,2,3,4,5\}$.

8. Let X be a set with 20 elements.
   a) How many four-element subsets does X have?
   b) How many sixteen-element subsets does X have?

9. We toss a coin eight times.
   a) How many outcomes are possible?
   b) How many outcomes are possible with 5 tails and three heads?

10. The supplement of an angle is 20° less than the angle. Find the angle.

11. Find x based on the picture below.



12. The complement of an angle is 10° more than the angle. Find the angle.

13. An inner angle of a regular polygon measures 156°. How many sides does the polygon have?

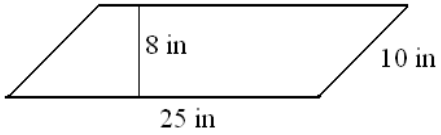
14. Find the measure of an inner angle in a regular polygon of 12 sides.

15. Find the perimeter and area of a rectangle with sides 7 ft and 12 ft long. Include units in your computation and answer.

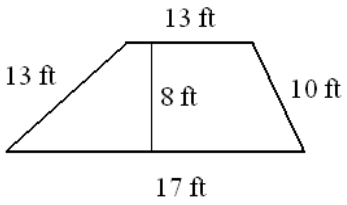
16. Find the perimeter and area of a right triangle with sides 12 m, 35 m, and 37 m long. Include units in your computation and answer.

17. a) Find the perimeter and area of the paralelogram shown on the picture below. Include units in your computation and answer.

    b) Find the perimeter and area of the trapezoid shown on the picture below. Include units in your computation and answer.



(a)



(b)

18. Find the circumference and area of a circle with radius 24 cm. Include units in your computation and answer.

19. We placed \$2000 into a bank account with an annual interest rate of 7%.. How much money is there in the account after 30 years if the bank offers

    a) simple interest b) compound interest

20. We borrowed \$3000 for two years, with an annual simple interest rate of 11%. Eight months after the borrowing rate, we make a partial payment of \$1000. After an additional seven months, we make another payment of \$800. How much do we owe at the end of the two years?