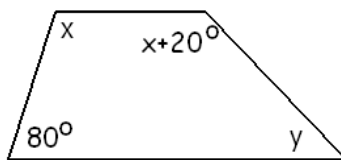
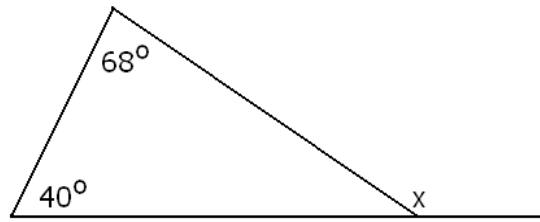


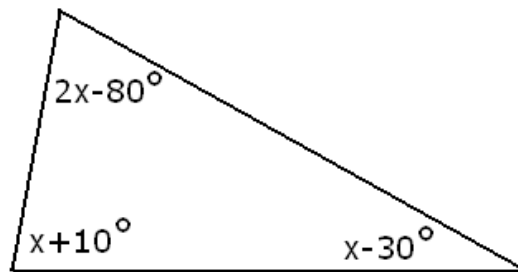
- Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$, $A = \{1, 3, 5, 7\}$, $B = \{1, 3, 4, 6, 8\}$, and $C = \{1, 4, 5, 6, 7, 9\}$.
True or false?
a) $A \subseteq (B \cup C)$ b) $9 \in \bar{A}$ c) $\overline{B \cap C} = \overline{B} \cup \overline{C}$
d) Draw a Venn diagram depicting these sets.
Find each of the following.
e) $A \cap B \cap C$ h) $\overline{A \cup B}$ k) $(A \cap \overline{B}) \cup (C \cap \overline{B})$
f) $C \cap (B \cup A)$ i) $\overline{A \cap B}$ l) $(B \cap \overline{C}) \cup (C \cap \overline{B})$
g) $B \cap \overline{C}$ j) $(B \cap \overline{C}) \cup C$ m) $|A \cup C|$
n) List all two-element subsets of C .
o) How many subsets does U have?
- Find $|X \cup Y|$ if we know that $|X| = 8$, $|Y| = 14$, and $|X \cap Y| = 5$.
- Find $|X|$ if we know that $|Y| = 20$, and $|X \cap Y| = 6$, and $|X \cup Y| = 30$.
- We throw a die twice. How many different outcomes are possible? (One example of an outcome is: first roll is a 2 and the second roll is a 5).
- We pull two cards from $\{1, 2, 3, 4, 5\}$. There is no replacement, i.e. after we pulled the first card, we do not put it back. List all possible outcomes if
a) The order of the numbers pulled matters, i.e. pulling first 3, then pulling 5 is counted as a separate outcome from pulling first 3 and then pulling 5.
b) The order of the numbers pulled does not matter, i.e. pulling first 3, then pulling 5 is counted as the same outcome as pulling first 3 and then pulling 5.
- How many different 7-digit number can be formed using the digits 1, 2, 3, 4, 5, 6, and 7, without repetition? (Don't try to list them!)
- The complement of an angle is 15° more than twice the angle. Find this angle. (Two angles are complements if their sum is 90°).
- The supplement of an angle is 4° more than three times the angle. Find the angle. (Two angles are supplemental if their sum is 180°).
- The largest angle of a triangle is 70° . Find the other two angles if we know that they differ by 6° .
- Consider a regular polygon of 15 sides.
a) Find the sum of the inner angles in the polygon.
b) Find the measure of an inner angle in the polygon.
- Find the value of x and y , based on the picture below.



12. Find the value of x , based on the picture below.



13. Find x based on the picture below.



14. The sum of the inner angles of a polygon is 5580° . How many sides does the polygon have?
15. Solve each of the following basic percent problems.
- 18 is what percent of 120?
 - 35% of a number is 84. Find this number.
 - Compute 125% of 420.
16. A TV went on a 20% sale. The sale price is \$600. How much was the original price?
17. The bacteria sample grew overnight, so the number of bacteria increased by 160%. If now there are 41 600 000 bacteria in the sample, how many were there yesterday?