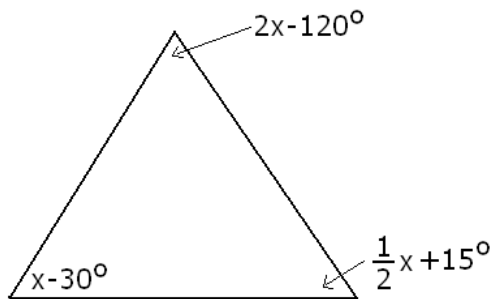
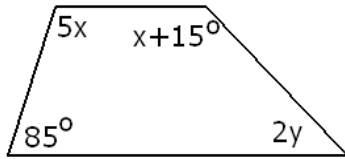


For problems 1-14, let  $U = \{a, b, c, d, e, f, g\}$ ,  $X = \{a, c, e, g\}$ ,  $Y = \{a, b, c\}$ , and  $Z = \{b, c, d, e, f\}$ .

1. Draw a Venn-diagram depicting these sets together.
2. Find  $X \cap Y$ .
3. Find  $X'$ .
4. Find  $Y' \cap Z'$ .
5. Find  $(Y \cup Z)'$ .
6. Find  $Y \cup Y'$ .
7. Find  $X \cap X'$ .
8. Find  $X \cup (Y \cap Z)$ .
9. Find  $(Y \cap Z') \cup X$ .
10. Find  $(Z \cap X') \cup (Z \cap Y')$ .
11. How many proper subsets does  $X \cup Y$  have?
12. List all subsets of  $X$ .
13. List all four-element subsets of  $Z$ .
14. List all two-element subsets of  $U$ .
15. 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!)
16. The complement of an angle is  $15^\circ$  more than twice the angle. Find this angle.
17. Find  $x$  based on the picture below.



18. Find  $x$  and  $y$ , based on the picture below.



19. Find the sum of the inner angles in a polygon of 15 sides.

20. Find the measure of an inner angle in a regular polygon of 15 sides.