Each figure is a parallelogram. Identify the special type and explain
your reasoning.

1.

2.

3.

4.

5.

6.
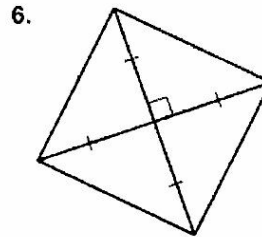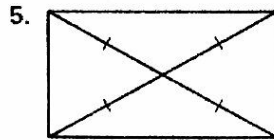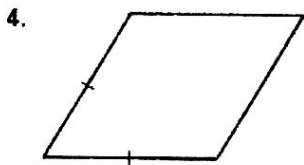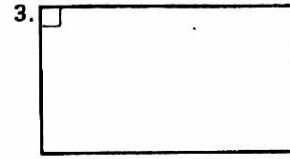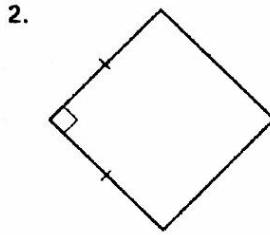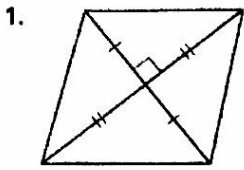
Find the value of x.

7. $MNOP$ is a square.

M   N

$3x + 14$

P $5x - 8$ O

8. $DEFG$ is a rhombus.

D   E

$(7x - 28)°$

G $(10x - 13)°$ F
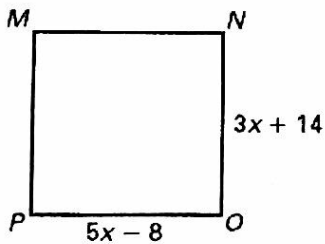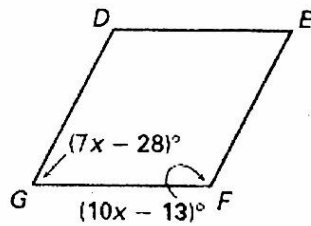
9. $WXYZ$ is a rectangle.

W   X

$7x + 4$ $3(x + 8)$

Z   Y
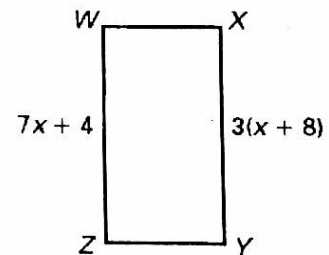
### Quadrilateral $ABCD$ is a rhombus.

A   B

E

D   C
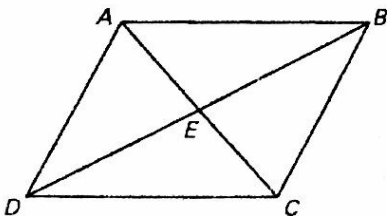
10. If $m\angle EDC = 43°$, find $m\angle CBA$.

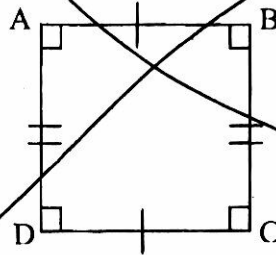**11.** If $m\angle EAB = 57°$, find $m\angle ADC$.

12. If $m\angle ADE = 5x - 8°$ and $m\angle CBE = 3x + 24$, solve for x.

First identify what shape you are given. Then solve for the variable(s) in each quadrilateral below using the properties of parallelograms, rhombi, rectangles, and squares. Show equation used. You may need to draw in diagonals based on the information given.

13. $m\angle BCA = 4y + 5;$
    $m\angle BCD = 6y + 30$
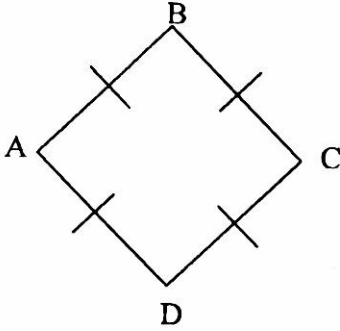
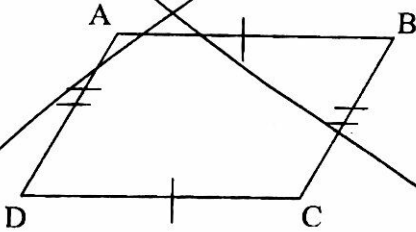14. $AD = 3x;$ $BC = 2y + 1$
    $AC = 4x - 2;$ $DB = y + 6$

    Don't
    Do

15. Let E be intersection of $\overline{AC}$ and $\overline{DB}$
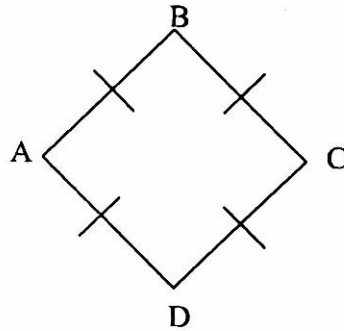 $AE = 2x;$ $EC = y + 7$
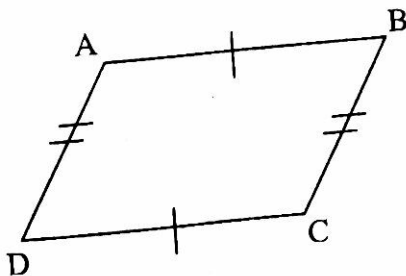 $DE = x;$ $DB = 31 - 7y$

    Don't
    Do

16. $m\angle ABD = 3x + 27;$
    $m\angle DBC = 9(x - 1)$

17. $m\angle ABC = 17x + 45;$
    $m\angle BCD = 8x + 10$

18. $AB = 4(x + 3);$ $BC = 6 - (2 + y)$
    $DC = 12(x - 5);$ $AD = 3y$