Name: _____

10.2.D2 · Parallelograms

Past due on: _____ Period: _____

Use the properties of parallelograms to set up and solve equations to find the value of the variables.

1.

$(12y + 8)°$

$(5y + 2)°$

$2x°$

2.

F $6x + 3$ G

$4x - 2y$

J 15 H

2

3.

$4y°$ $x°$

$2y°$

$(5x - 180)°$

4.

$(x + y)°$

$2x°$

$30°$

$24°$

5.

$4x + 20$

$7y$ $6x + 9$

$x + 26$

6.

x

$5x - 4$

$2y$

$2x + 14$
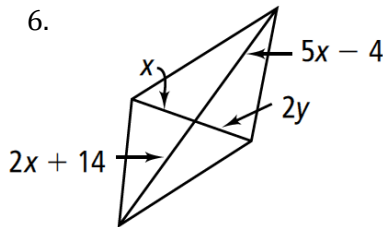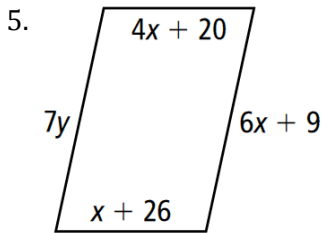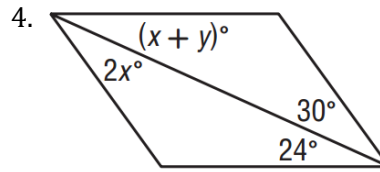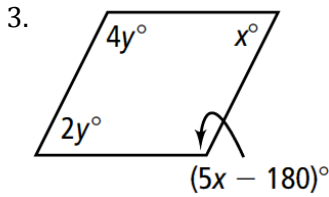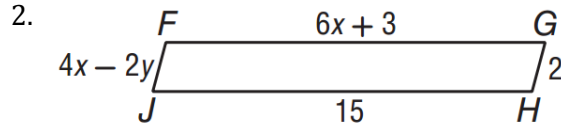
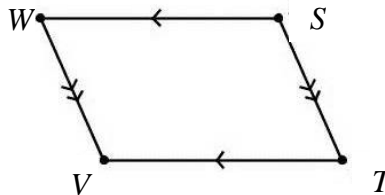**Use the properties of parallelograms to set up and solve a _system of equations_ to find the value of the variables.**

7.

$3x + 1$

$5x$ $2y - 5$

y

8.

y

$3x$

$y + 7$

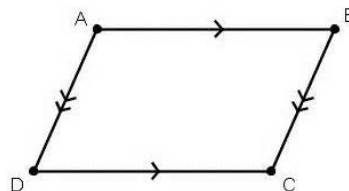$x + 3$
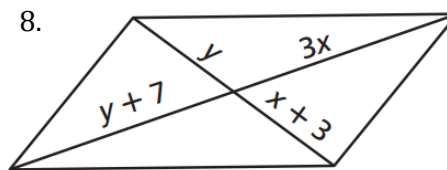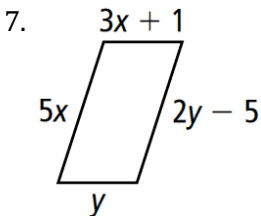
9. Given: $\square WSTV$

   $WS = x + 5$
   $WV = x + 9$
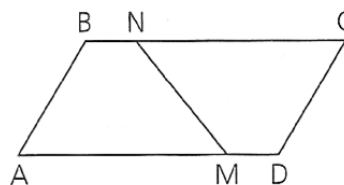 $VT = 2x + 1$

   Find the value of x AND the perimeter of $WSTV$.
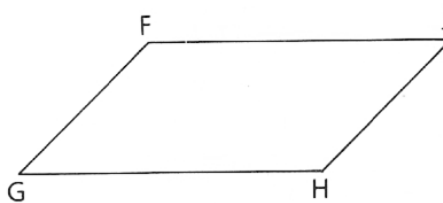

10. Given: $\square ABCD$

    $\angle A = x$
    $\angle D = 3x - 4$

    Find: $m\angle D$ & $m\angle C$

11. $ABCD$ is a parallelogram with perimeter 52. The perimeter of $ABNM$ is 36, and $\overline{NC} \cong \overline{AM}$. Find NM.

12. Given: Parallelogram $FGHJ$

    $FG = x + 5$
    $GH = 2x + 3$
    $\angle G = 40°$
    $\angle J = 4x + 12$

    Find: The value of x, $m\angle F$, AND the perimeter of $FGHJ$

13. *Use the given information to set up and solve a system of equations.*

    Find the value of the variables. Then find the measure of all four angles.

    Given: $\angle A = x + 3y$

    $\angle B = x - 4$

    $\angle C = 4y - 8$