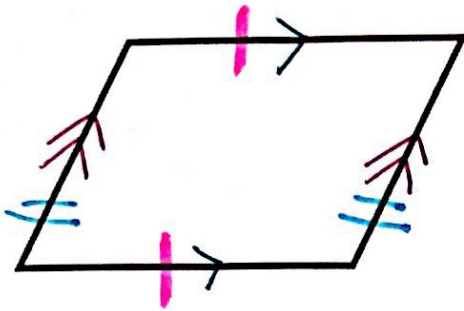


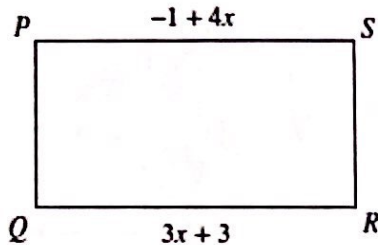
## GUIDED NOTES: Properties of Parallelograms

**Property: Opposite sides are parallel.**



**Property: Opposite sides are congruent.**

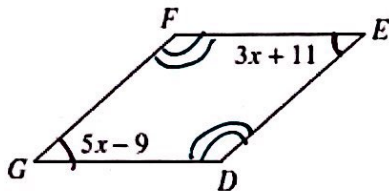
EX1. Solve for x.



$$\begin{aligned} -1 + 4x &= 3x + 3 \\ +1 & \quad +1 \\ 4x &= 3x + 4 \\ -3x & \quad -3x \\ x &= 4 \end{aligned}$$

**Property: Opposite angles are congruent.**

EX2. Find  $m\angle G$ .

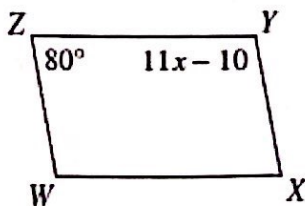


$$\begin{aligned} 5x - 9 &= 3x + 11 \\ +9 & \quad +9 \\ 5x &= 3x + 20 \\ -3x & \quad -3x \\ 2x &= 20 \\ \frac{2x}{2} &= \frac{20}{2} \\ x &= 10 \end{aligned}$$

$$\begin{aligned} 5(10) - 9 \\ 50 - 9 \\ 41^\circ = \angle G \end{aligned}$$

**Property: Consecutive angles are supplementary.**

EX3. Solve for x.



$$\begin{aligned} 80 + 11x - 10 &= 180 \\ 70 + 11x &= 180 \\ -70 & \quad -70 \\ 11x &= 110 \\ \frac{11x}{11} &= \frac{110}{11} \\ x &= 10 \end{aligned}$$

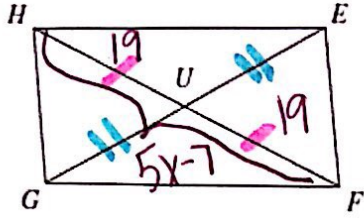
$$80 + 11x - 10 = 180$$

$$\begin{aligned} 70 + 11x &= 180 \\ -70 & \quad -70 \\ 11x &= 110 \\ \frac{11x}{11} &= \frac{110}{11} \\ x &= 10 \end{aligned}$$

$$x = 10$$

Property: Diagonals bisect each other.

EX4. Given  $UH = 19$  and  $FH = 5x - 7$ , solve for  $x$ .



$$19 + 19 = 5x - 7$$

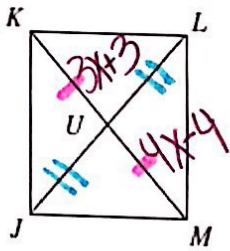
$$38 = 5x - 7$$
$$+7 \quad +7$$

$$45 = 5x$$

$$\frac{45}{5} = \frac{5x}{5}$$

$$x = 9$$

EX5. Given  $KU = 3x + 3$  and  $UM = 4x - 4$ , solve for  $x$ .



$$3x + 3 = 4x - 4$$
$$-3x \quad -3x$$

$$3 = x - 4$$

$$+4 \quad +4$$

$$x = 7$$