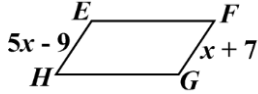<table>
<tr><td align="center">Parallelograms</td></tr>
</table>

Parallelograms are quadrilaterals (four-sided figures) with two sets of parallel sides. Since the sides are parallel, the same side interior angles add to equal 180°, creating two sets of congruent opposite angles. You can then use congruent triangle properties to show that opposite sides have to be congruent as well.
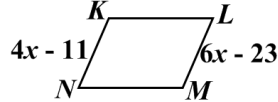
To determine the value of a pair of opposite sides on a parallelogram, set them equal. To determine the value of a pair of opposite angles, set them equal. Opposite parts on a parallelogram will always have equal value.
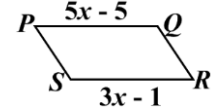
Evaluate.

1. Determine the length of side *EH* on the parallelogram. E F $5x - 9$ $x + 7$ H G	2. Determine the length of side *LM* on the parallelogram. K L $4x - 11$ $6x - 23$ N M	3. Determine the length of side *PQ* on the parallelogram. $5x - 5$ P Q S R $3x - 1$
4. Determine the length of side *TV* on the parallelogram. T $11x$ V Z W $8x + 12$	5. Determine the length of side *LM* on the parallelogram. L $8x - 6$ M P $6x + 10$ N	6. Determine the length of side *CD* on the parallelogram. A $10x - 5$ B D $6x + 3$ C
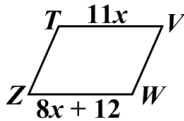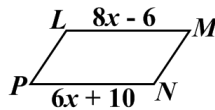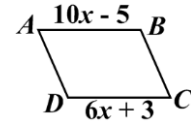
7. Determine the length of side *GH* on the parallelogram. F _____ G 2x + 16 / / 10x - 8 J _____ H	8. Determine the length of side *DE* on the parallelogram. C _____ D 9x - 4 / / -5x + 24 F _____ E	9. Determine the length of side *HK* on the parallelogram. G _____ H -3x + 11 \ \ -2x + 10 L _____ K
10. Determine the length of side *EB* on the parallelogram. B _____ C -7x + 2 / / -10x - 10 E _____ D	11. Determine the length of side *MN* on the parallelogram. M _10x - 9_ N Q _7x - 6_ P	12. Determine the length of side *QR* on the parallelogram. Q _8x - 4_ R T _3x + 11_ S
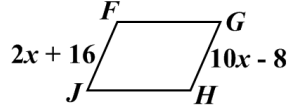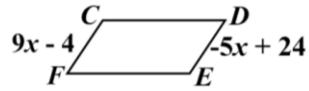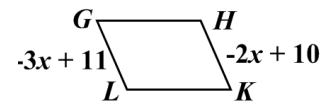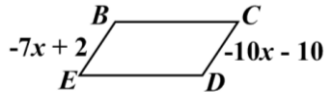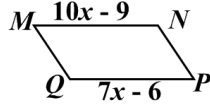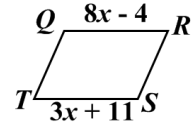
Opposite Sides on Parallelograms Answers

1. $EH = 11$	2. $LM = 13$	3. $PQ = 5$	4. $TV = 44$	5. $LM = 58$	6. $CD = 15$
7. $GH = 22$	8. $DE = 14$	9. $HK = 8$	10. $EB = 30$	11. $MN = 1$	12. $QR = 20$