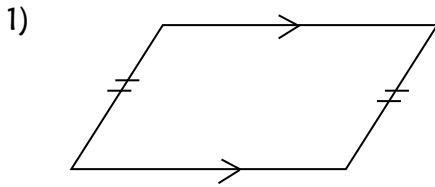


Geometry
6.2, 6.3 Parallelograms Study Guide

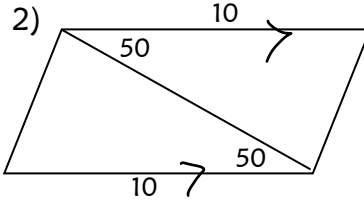
Name _____

For 1-7, Objective 6.2 b: use properties of a parallelogram to solve coordinate and algebraic problems.
Try the problems first, then rate yourself on a scale of 1 to 5. 1 2 3 4 5

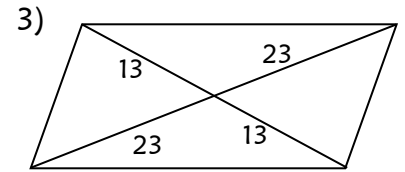
1-3 Determine if each shape is a parallelogram. If so, explain why.



no



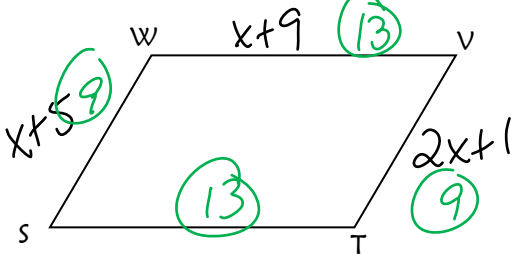
yes 1 pr opp sides ≅ & ||



yes, diag. bisect e/o

4) Given: WSTV is a parallelogram
 $WS = x + 5$
 $WV = x + 9$
 $VT = 2x + 1$

Find: the perimeter of WSTV



$$x + 5 = 2x + 1$$

$$4 = x$$

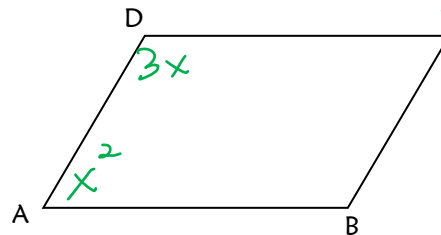
$$P = 44$$

5) Given: ABCD is a parallelogram:

$$\angle A = x^2$$

$$\angle D = 3x$$

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



$$m\angle D = 36^\circ$$

$$m\angle C = 144^\circ$$

$$x^2 + 3x = 180$$

$$x^2 + 3x - 180 = 0$$

$$(x - 12)(x + 15) = 0$$

$$x = 12, -15$$

6) The measure of one angle of a parallelogram is 40 more than 3 times another. Find the measure of each angle.

$$x + 40 + 3x = 180$$

$$4x + 40 = 180$$

$$4x = 140$$

$$x = 35$$

$$35^\circ, 145^\circ$$

7) Choose Always, Sometimes, or Never... A quadrilateral is a parallelogram if:

- _____ a) Diagonals are congruent.
- _____ b) One pair of opposite Sides are congruent and one pair of opposite sides are parallel.
- _____ c) Each pair of consecutive angles are Supplementary.
- _____ d) All angles are right angles.

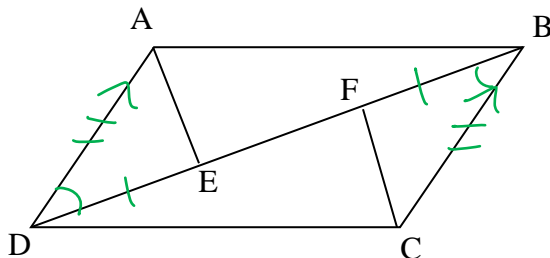
For 8, Objective 6.2 a: Given a parallelogram, prove its properties in a two column proof.

Try the proof first, then rate yourself on a scale of 1 to 5.

1 2 3 4 5

8) Given: $ABCD$ is a \square
 $\overline{DE} \cong \overline{BF}$

Prove: $\overline{AE} \cong \overline{CF}$



- 1) $ABCD$ is p-gram
- 2) $\overline{AD} \parallel \overline{BC}$
- 3) $\angle ADE \cong \angle CBF$
- 4) $\overline{AD} \cong \overline{BC}$
- 5) $\overline{DE} \cong \overline{BF}$
- 6) $\triangle ADE \cong \triangle CBF$
- 7) $\overline{AE} \cong \overline{CF}$

- 1) Given
- 2) If $\square \rightarrow$ opp sides \parallel
- 3) If $\parallel \rightarrow$ alt int \angle 's \cong
- 4) If $\square \rightarrow$ opp sides \cong
- 5) Given
- 6) SAS (3, 4, 5)
- 7) CPCTC

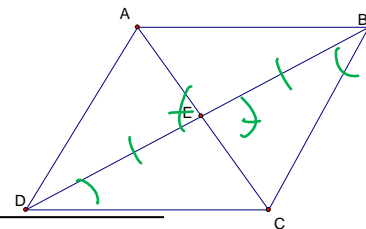
For 9, Objective 6.3 a: Prove a quadrilateral is a parallelogram using a two column proof.

Try the proof first, then rate yourself on a scale of 1 to 5.

1 2 3 4 5

9) Given: E is the midpt. of \overline{BD}
 $\angle ADE \cong \angle CBE$

Prove: $ABCD$ is a \square



- 1) E midpt \overline{BD}
- 2) $\overline{DE} \cong \overline{BE}$
- 3) $\angle ADE \cong \angle CBE$
- 4) $\overline{AD} \parallel \overline{BC}$
- 5) $\angle AED \cong \angle CEB$
- 6) $\triangle AED \cong \triangle CEB$
- 7) $\overline{AD} \cong \overline{BC}$

- 1) Given
- 2) If pt midpt \rightarrow $\frac{1}{2}$ seg into 2 \cong segs
- 3) Given
- 4) If alt int \angle 's $\cong \rightarrow$ \parallel lines
- 5) Vertical \angle 's \cong
- 6) ASA (3, 2, 5)
- 7) CPCTC