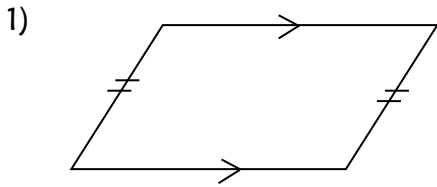


Geometry  
6.2, 6.3 Parallelograms Study Guide

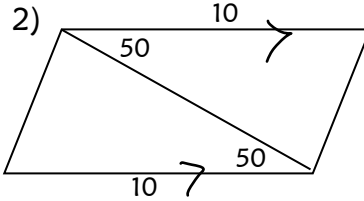
Name \_\_\_\_\_

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

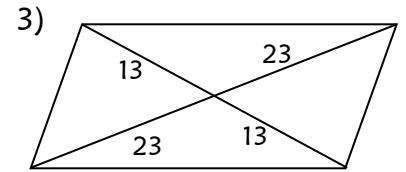
1-3 Determine if each shape is a parallelogram. If so, explain why.



no



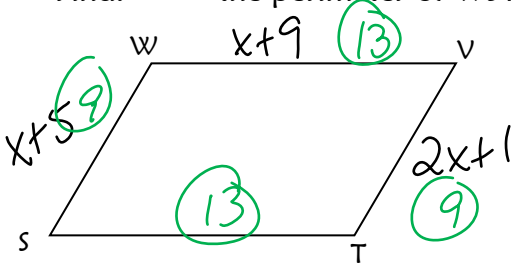
yes 1 pr opp sides  $\cong$  &  $\parallel$



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



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

$$4 = x$$

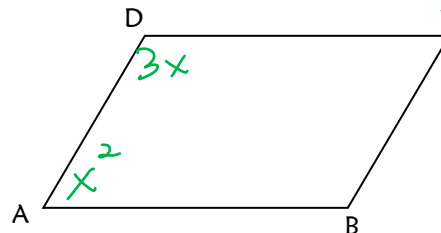
$$P = 44$$

5) Given: ABCD is a parallelogram:

$$\angle A = x^2$$

$$\angle D = 3x$$

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



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

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

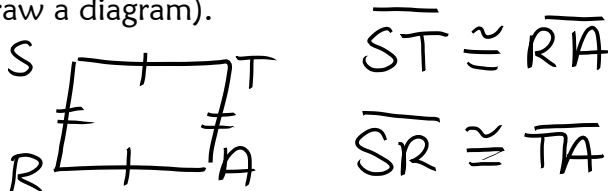
$$x^2 + 3x = 180$$

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

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

$$x = 12, -15$$

6) Given: Parallelogram STAR, list the pairs of sides that are congruent to each other  
(Hint: Draw a diagram).



$$\overline{ST} \cong \overline{RA}$$

$$\overline{SR} \cong \overline{TA}$$

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

S a) Diagonals are congruent.

N b) One pair of opposite Sides are congruent and one pair of opposite sides are parallel.

A c) Each pair of consecutive angles are Supplementary.

S d) All angles are right angles.

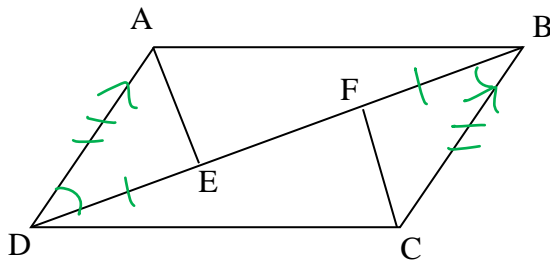
For 8, Objective 6.2 a: Given a parallelogram, prove its properties in a two column proof.

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

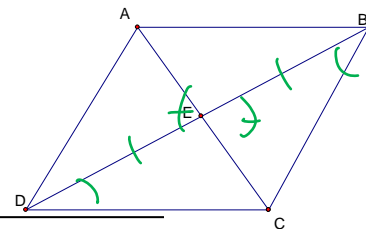
For 9, Objective 6.3 a: Prove a quadrilateral is a parallelogram using a two column proof.

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