Math 2 Unit 5 Worksheet 2
Properties of Parallelograms

Name:_____
Date:_____Per:_____

[1-5] The given figures are all parallelograms. Solve for the variable(s) in each diagram, then state the property of
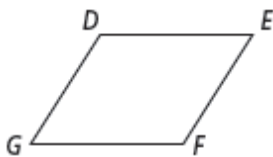   parallelograms that allowed you to solve for the variable(s).
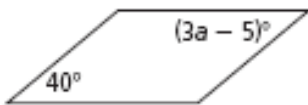
1.

$x = $ _____

Property: _____

_____

_____

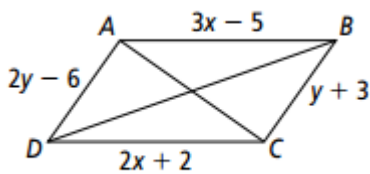2. $DG = 2x + 2, DE = 3x + 1, EF = 3x - 3, GF = 2x + 6$

$x = $ _____

Property: _____

_____

_____

3.

$a = $ _____

Property: _____

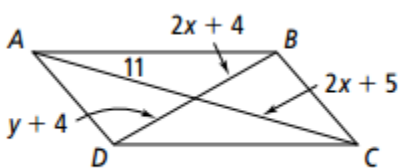_____

_____

4.

$x = $ _____

$y = $ _____

Property: _____

_____

_____

5.

$x = $ _____

$y = $ _____

Property: _____

_____

_____

[6-11] Can you prove the quadrilateral is a parallelogram based on the given information? Explain.
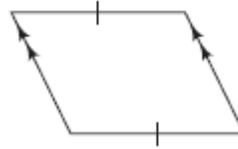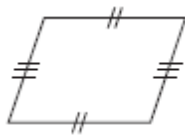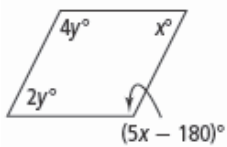
6.

_____

_____

_____

7.

_____

_____

_____

8.

136°

136°   44°

_____

_____

_____

9.

_____

_____

_____

10.

_____

_____

_____

11.

_____

_____

_____

[12-15] For what values of x and y must each figure be a parallelogram?

12.

4y°   x°

2y°

(5x − 180)°

$x =$ _____

$y =$ _____

13.

3x + 5

y + 3   2y − 1

4x

$x =$ _____

$y =$ _____

14.

x   5x − 4

2y

2x + 14

$x =$ _____

$y =$ _____

15.

4x + 20

7y   6x + 9
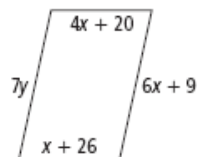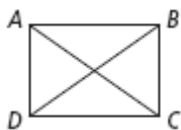
x + 26

$x =$ _____
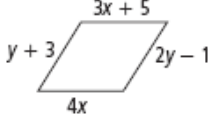
$y =$ _____

16. A classmate draws a parallelogram for which one side is twice as long as the other. If one side is 26 units, what are all the possible lengths of the perimeter?

17. Complete the two-column proof.

Given: Parallelogram $ABCD$ with $\overline{AC} \cong \overline{BD}$
Prove: $\triangle ADC \cong \triangle BCD$

Statement	Reason
1. Parallelogram $ABCD$ with $\overline{AC} \cong \overline{BD}$	1. Given
2.	2. Opposite sides of parallelograms are congruent.
3. $\overline{DC} \cong \overline{CD}$	3.
4.	4. SSS