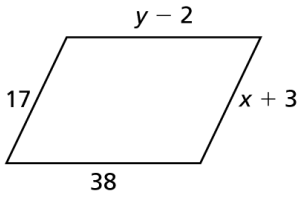
Name_____ Date _____

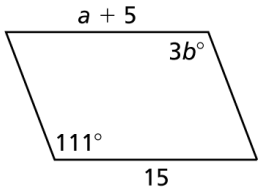
7.2 Practice A

In Exercises 1–4, find the value of each variable in the parallelogram.

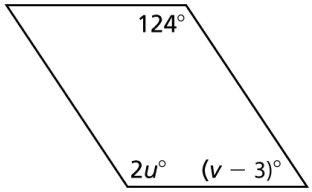
1.



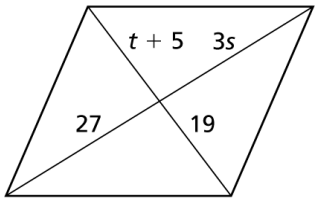
2.



3.



4.



5. Find the coordinates of the intersection of the diagonals of the parallelogram with vertices $(-2, -1)$, $(1, 3)$, $(6, 3)$, and $(3, -1)$.

In Exercises 6 and 7, three vertices of parallelogram *ABCD* are given. Find the remaining vertex.

6. $A(-2, 0)$, $B(-2, -2)$, $D(2, 2)$

7. $A(-1, -3)$, $C(1, 2)$, $D(-1, -2)$

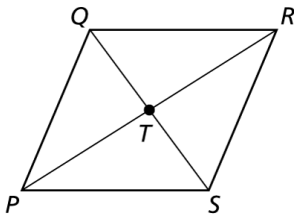
8. The measure of one interior angle of a parallelogram is $30°$ more than two times the measure of another angle. Find the measure of each angle of the parallelogram.

9. Your friend claims that you can prove that two parallelograms are congruent by proving that they have two pairs of congruent opposite angles. Is your friend correct? Explain your reasoning.

10. Use the diagram to write a two-column proof.

Given: *PQRS* is a parallelogram.

Prove: $\triangle PQT \cong \triangle RST$

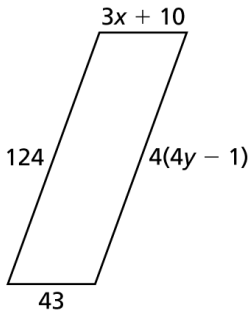


Name _____ Date _____

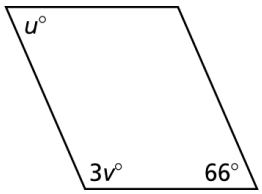
7.2 Practice B

In Exercises 1–4, find the value of each variable in the parallelogram.

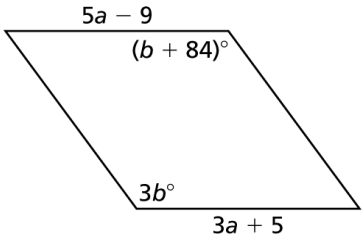
1.



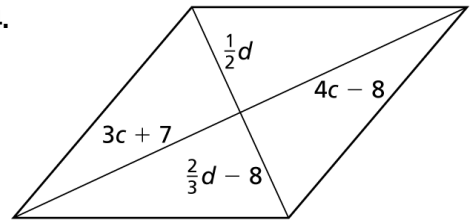
2.



3.



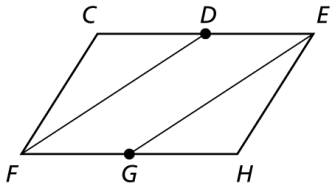
4.



5. Find the coordinates of the intersection of the diagonals of the parallelogram with vertices $(-2, -4)$, $(-4, 4)$, $(2, 12)$, and $(4, 4)$.

6. Three vertices of parallelogram $ABCD$ are $A(1, 5)$, $B(1, 1)$, and $D(2, 2)$. Find the coordinates of the remaining vertex.

7. Use the diagram to write a two-column proof.



Given: $CEHF$ is a parallelogram.
D bisects $\overline{CE}$ and G bisects $\overline{FH}$.

Prove: $\triangle CDF \cong \triangle HGE$

8. State whether each statement is *always*, *sometimes*, or *never* true for a parallelogram. Explain your reasoning.

a. The opposite sides are congruent.

b. All four sides are congruent.

c. The diagonals are congruent.

d. The opposite angles are congruent.

e. The adjacent angles are congruent.

f. The adjacent angles are complementary.