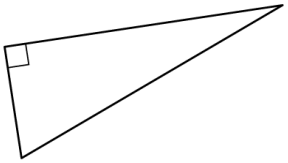
Name _____ Date _____

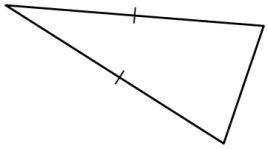
5.1 Practice A

In Exercises 1 and 2, classify the triangle by its sides and by measuring its angles.

1.



2.



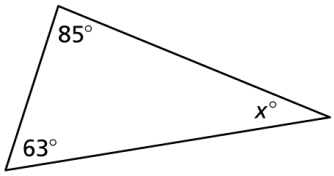
In Exercises 3 and 4, classify $\triangle QRS$ by its sides. Then determine whether it is a right triangle.

3. $Q(2, 2), R(1, -2), S(-4, -4)$

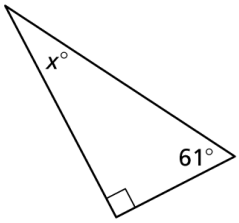
4. $Q(-1, 3), R(3, 2), S(-2, -1)$

In Exercises 5–8, find the value of x.

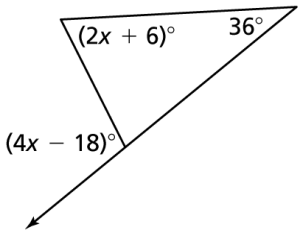
5.



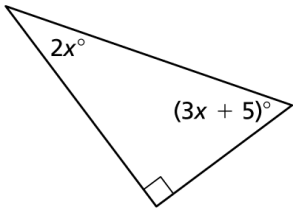
6.



7.



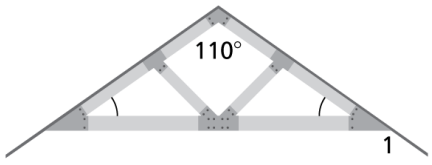
8.



9. The measure of one acute angle of a right triangle is 12 more than 3 times the measure of the other acute angle. Find the measure of each acute angle of the right triangle.

10. Your friend claims that the measure of an exterior angle of a triangle can never be acute because it is the sum of the two nonadjacent angles of the triangle. Is your friend correct? Explain your reasoning.

11. The figure shows the measures of various angles of a roof and its supports. Find the measure of $\angle 1$, the angle between an eave and a horizontal support beam.

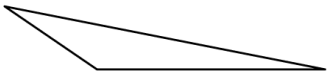


Name_____ Date _____

5.1 Practice B

In Exercises 1 and 2, classify the triangle by its sides and by measuring its angles.

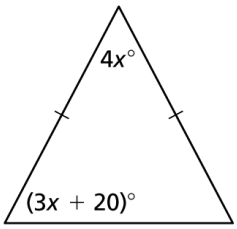
1.



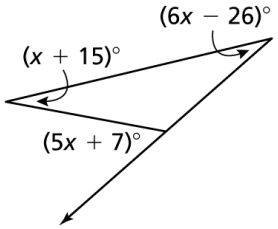
2. $J(1, 2), K(-4, 0), L(-2, 5)$

In Exercises 3–5, find the value of *x*.

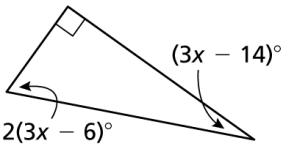
3.



4.

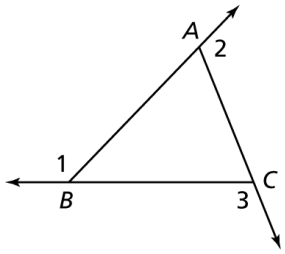


5.

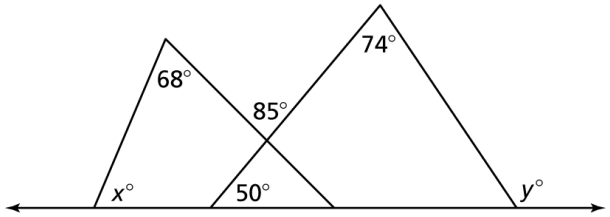


6. In $\triangle ABC$, $m\angle A = (6x + 18)°$ and $m\angle B = (3x + 2y)°$. Solve for x and y.

7. The figure shows three exterior angles of $\triangle ABC$. Show that $m\angle 1 + m\angle 2 + m\angle 3 = 360°$.



8. In the figure, solve for x and y.



9. Is it possible for a triangle to have angle measures in an extended ratio of $1 : 4 : 7$? If so, find the three angle measures. If not, explain why it is not possible.

10. Your friend says that an exterior angle can never be complementary to any of the interior angles in a triangle. Is your friend correct? Explain your reasoning.

11. In $\triangle ABC$ and $\triangle RST$, $\angle A \cong \angle R$ and $\angle B \cong \angle S$. What can you say about $\angle C$ and $\angle T$? Explain.