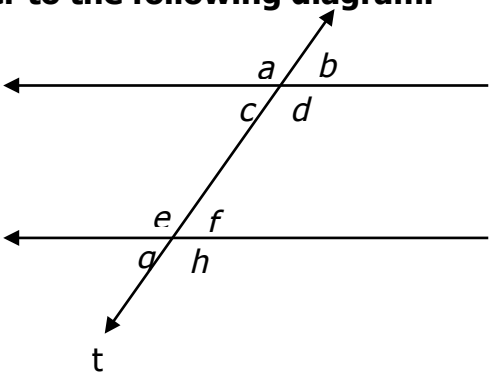
# P.S. #6.6 - Angle Relationships

Name: _____ Class: _____

**For questions 1-12, refer to the following diagram.**




1.) Which angle is the vertical angle to angle a? _____

2.) Which angle corresponds to angle f? _____

3.) Which angles are adjacent to angle c? _____, _____

4.) List all the angles that are congruent to angle e. _____, _____, _

5.) List four angles that are supplementary to angle d. _____, _____

6.) What is the alternate interior angle to angle c? _____

7.) What is alternate exterior angle to angle g? _____

8.) If a = 159°, find the remaining angles.

b = _____ c = _____ d = _____

e = _____ f = _____ g = _____ h = _____

9.) Angles a and h are congruent to each other. Why? _____

_____

10.) Angles f and b are congruent to each other. Why? _____

_____

11.) Angles e and h are congruent to each other. Why? _____

_____

12.) Angles e and d are congruent to each other. Why? _____

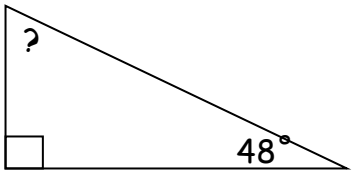
_____

13.) What do you know about the sum of the three angles in a triangle?

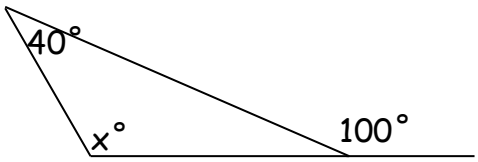
14.) What do you know about the sum of exterior angles?

15.) If two angles in a triangle have measures of 62° and 48°, what is the degree measure of the third angle?

16.) Find the missing angle:




20.) Find the missing angle:

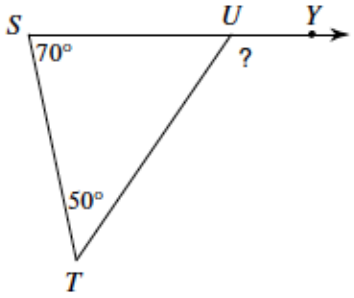



21.) If the measures of the angles in a triangle are represented by (x + 12)°, x°, and (2x + 16)°, what is the value of x? How big is each angle?

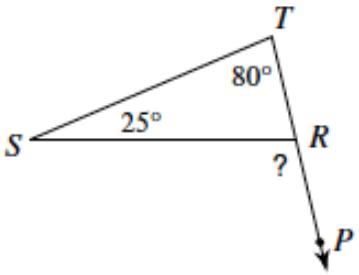
| *x* | |
|---|---|
| Angle 1 | |
| Angle 2 | |
| Angle 3 | |

22.) Find the measure of each missing angle below.

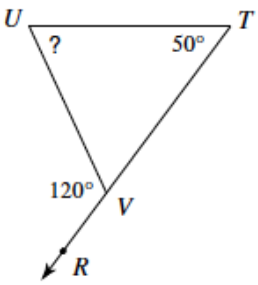
a.)



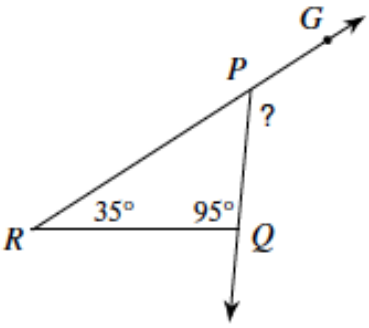

b.)



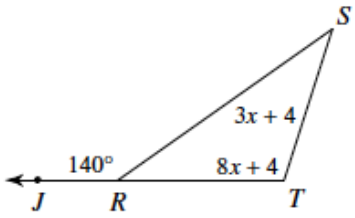

c.)



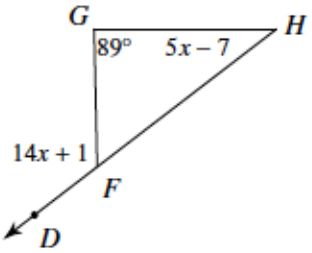

d.)



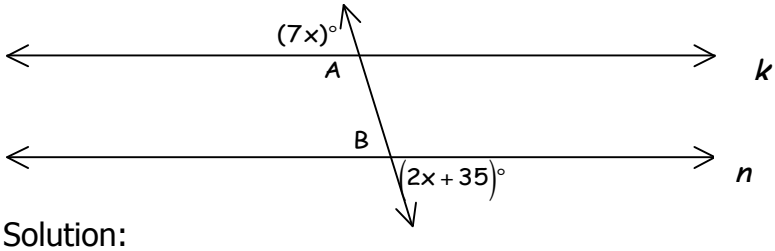
23.) Find $m\angle S$.




24.) Find $m\angle H$.




25.) In the accompanying diagram, $\overleftrightarrow{k} \parallel \overleftrightarrow{n}$. **Find the value of x,** $m\angle A$**, and** $m\angle B$**.**

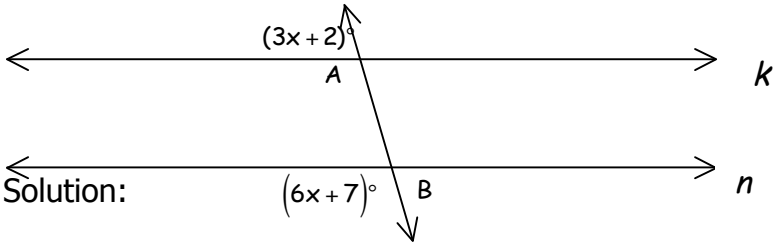



Equation: _____
Why: _____
_____

Solution:

x = _____ $m\angle A$ = _____ $m\angle B$ = _____

26.) In the accompanying diagram, $\overleftrightarrow{k} \parallel \overleftrightarrow{n}$. Find the value of x, $m\angle A$, and $m\angle B$.




Equation: _____
Why: _____
_____

Solution:

x = _____ $m\angle A$ = _____ $m\angle B$ = _____