**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per.\_\_\_\_\_\_\_**

**U2 CW #3** *Finding Angle Measures in Triangles and Similar Triangles*

So far you should have learned that triangles (∆) and transversals have the following properties:

* **Angles that lie on the same line are supplementary(180°) and have a common vertex.**
* **Vertical angles always have the same measure.**
* **If two lines are parallel and they are intersected by a transversal, then corresponding angles at the points of intersection have the same measure.**
* **Given two lines, if a third line cuts through both lines so that corresponding angles are congruent, then the two lines are parallel.**

The following bolded bullets are additional facts we should know.

* **The sum of the interior angles of a triangle is a straight angle (180˚).**
* **The sum of the interior angles of a quadrilateral is 360˚. (2 triangles are found in every quadrilateral)**
* **The measure of an exterior angle of a triangle is equal to the sum of the measures of the non-adjacent angles.**

**Directions:** In the following problems, solve for the missing angle(s) using the rules and properties above. Make sure that you write the equation that you use to solve for the missing angel measures. Some shapes with require multiple equations and steps.

|  |  |
| --- | --- |
| 1.

$x=$ \_\_\_\_\_\_\_\_\_\_ | 1.

$x=$ \_\_\_\_\_\_\_\_\_ |
| 1.

..$s=$ \_\_\_\_\_\_\_\_\_ | 1.

$x=$ \_\_\_\_\_\_\_\_\_\_ |
| 1.

$w$ \_\_\_\_\_\_\_ $x= \\_\\_\\_\\_\\_\\_\\_\\_\\_$ $y=$ \_\_\_\_\_\_\_ | 1.

$e=$ \_\_\_\_\_\_\_\_\_ $f=$ \_\_\_\_\_\_\_\_\_\_\_ |
| 1.

$p=$ \_\_\_\_\_\_ $q=$ \_\_\_\_\_ $r=$ \_\_\_\_\_\_\_$s=$ \_\_\_\_\_\_ $t=$ \_\_\_\_\_\_  | 1.

$b=$ \_\_\_\_\_\_\_\_\_\_$c=$ \_\_\_\_\_\_\_\_\_\_ |
| 1. Given: line $p∥$ line *q*

$∠1=$ \_\_\_\_\_ $∠2= \\_\\_\\_\\_\\_\\_$ $∠3=$ \_\_\_\_\_$∠4=$ \_\_\_\_ $∠5=$ \_\_\_\_\_ $∠6= \\_\\_\\_\\_\\_\\_$$∠7=$ \_\_\_\_\_ | 1. Given line $s∥$ line *t*

$∠1=$ \_\_\_\_ $∠2=$ \_\_\_\_\_ $∠3=$ \_\_\_\_$∠4=$ \_\_\_\_ $∠5=$ \_\_\_\_ $∠6= \\_\\_\\_\\_\\_$ $∠7=$ \_\_\_\_ $∠8=$ \_\_\_\_ |