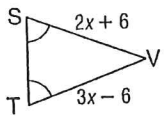
Name: Key Date: _____ HR: _____

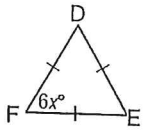
Isosceles and Equilateral Triangles- HW#2

Find x.

1. 

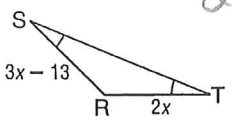
$2x+6 = 3x-6$

$12 = x$

2. 

$6x = 60$

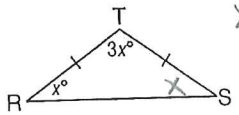
$x = 10$

3. 

$2x = 3x-13$

$-x = -13$

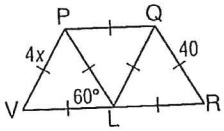
$x = 13$

4. 

$x + x + 3x = 180$

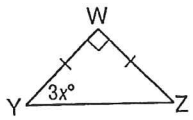
$5x = 180$

$x = 36$

5. 

$4x = 40$

$x = 10$

6. 

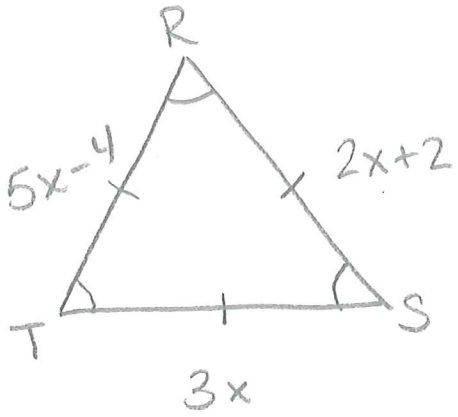
$3x + 3x + 90 = 180$

$6x + 90 = 180$

$6x = 90$

$x = 15$

7. Find the measure of each side of equilateral $\triangle RST$ with $RS = 2x + 2$, $ST = 3x$, and $TR = 5x - 4$.



$3x = 2x + 2$

$x = 2$

$5(2) - 4 = 6$

$2(2) + 2 = 6$

$3(2) = 6$

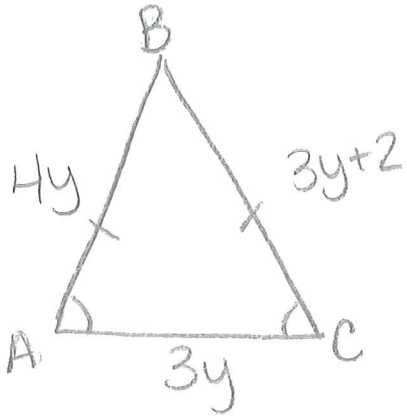
$x =$ 2

$RS =$ 6

$ST =$ 6

$TR =$ 6

8. Find the measure of each side of isosceles $\triangle ABC$ with $AB = BC$ if $AB = 4y$, $BC = 3y + 2$, and $AC = 3y$.



$4y = 3y + 2$

$y = 2$

$AB = 4(2) = 8$

$BC = 3(2) + 2 = 8$

$AC = 3(2) = 6$

$y =$ 2

$AB =$ 8

$BC =$ 8

$AC =$ 6

9. Find the measure of each side of $\triangle ABC$ with vertices $A(-1, 5)$, $B(6, 1)$, and $C(2, -6)$. Classify the triangle.

$AC = 11^2 + 3^2 = x^2$

$121 + 9 = x^2$

$\sqrt{130} = x$

$BC = 7^2 + 4^2 = x^2$

$49 + 16 = x^2$

$\sqrt{65} = x$

$AB = 7^2 + 4^2 = x^2$

$x = \sqrt{65}$

2 $\cong$ sides

$\therefore$ isosceles triangle