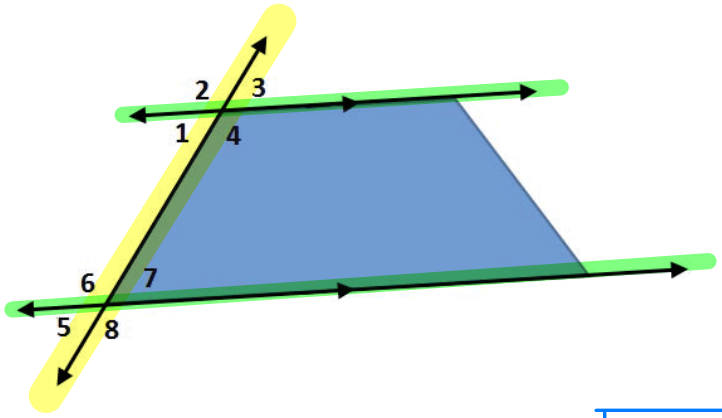
READY, SET, GO! Name Key Period _____ Date _____

READY

Topic: Angle Pairs and Geometry Vocabulary.

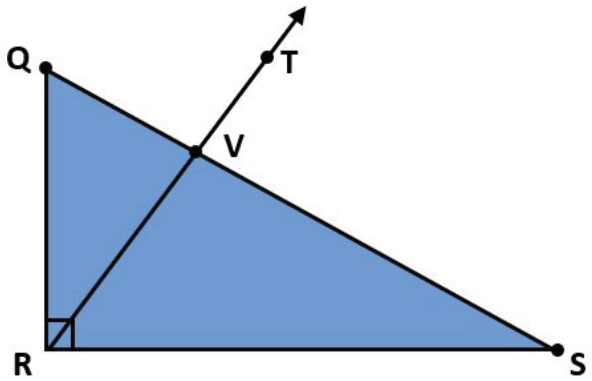
For questions 1-5 list a pair of angles for each of the following vocabulary words:



1. Alternate interior angles $\angle 1 \cong \angle 7$, $\angle 4 \cong \angle 6$
2. Corresponding angles $\angle 2 \cong \angle 6$, $\angle 1 \cong \angle 5$, $\angle 3 \cong \angle 7$, $\angle 4 \cong \angle 8$
3. Alternate exterior angles $\angle 3 \cong \angle 5$, $\angle 2 \cong \angle 8$
4. Supplementary angles _____
5. Vertical angles $\angle 1 \cong \angle 3$, $\angle 2 \cong \angle 4$, $\angle 6 \cong \angle 8$, $\angle 5 \cong \angle 7$
6. Identify the transversal line.
7. Identify the parallel lines.

$\angle 2 + \angle 3 = 180°$	$\angle 6 + \angle 7 = 180°$	$\angle 1 + \angle 6 = 180°$
$\angle 3 + \angle 4 = 180°$	$\angle 6 + \angle 5 = 180°$	$\angle 4 + \angle 7 = 180°$
$\angle 4 + \angle 1 = 180°$	$\angle 5 + \angle 8 = 180°$	
$\angle 1 + \angle 2 = 180°$	$\angle 8 + \angle 7 = 180°$	

Use the triangle below to answer questions 8-11.



8. List a pair of complementary angles $\angle QRV + \angle SRV = 90°$
9. List a pair of supplementary angles $\angle QVT + \angle SVT = 180°$, $\angle QVR + \angle SVR = 180°$
10. List a pair of vertical angles $\angle QVT \cong \angle SVR$, $\angle QVR \cong \angle SVT$
11. List a pair of perpendicular line segments

$\overline{QR} \perp \overline{SR}$

SET

Topic: Solving Equations

Solve each equation algebraically. Remember to check for extraneous solutions.

12. $(x-7)^2 = (\sqrt{x+5})^2$

$x^2 - 14x + 49 = x + 5$

$x^2 - 15x + 44 = 0$

$(x-11)(x-4) = 0$

$\boxed{x = 11}$ $\quad x = \cancel{4}$ extraneous

$11 - 7 = \sqrt{11+5}$ | $4 - 7 = \sqrt{4+5}$

$4 = \sqrt{16}$ | $-3 = \sqrt{9}$

$4 = 4$ ✓ | $-3 = 3$ ✗

13. $(\sqrt{8-x})^2 = (2x-1)^2$

$8 - x = 4x^2 - 4x + 1$

$0 = 4x^2 - 3x - 7$

$0 = (4x-7)(x+1)$

$\boxed{x = \frac{7}{4}}$ $\quad x = \cancel{-1}$ extraneous

$\sqrt{8 - (\frac{7}{4})} = 2(\frac{7}{4}) - 1$ | $\sqrt{8 - -1} = 2(-1) - 1$

$\sqrt{\frac{32}{4} - \frac{7}{4}} = \frac{7}{2} - 1$ | $\sqrt{9} = -2 - 1$

$\sqrt{\frac{25}{4}} = \frac{7}{2} - \frac{2}{2}$ | $3 = -3$ ✗

$\frac{5}{2} = \frac{5}{2}$ ✓

14. $\sqrt{x+10} + 2 = 0$ isolate radical

$\sqrt{x+10} = -2$

not possible

$\boxed{\text{no solution}}$

15. $(\sqrt{-16+10x})^2 = (x)^2$

$-16 + 10x = x^2$

$0 = x^2 - 10x + 16$

$0 = (x-8)(x-2)$

$x - 8 = 0$ $\quad x - 2 = 0$

$\boxed{x = 8}$ $\quad \boxed{x = 2}$

$\sqrt{-16+10(8)} = 8$ | $\sqrt{-16+10(2)} = 2$

$\sqrt{-16+80} = 8$ | $\sqrt{-16+20} = 2$

$\sqrt{64} = 8$ | $\sqrt{4} = 2$

$8 = 8$ ✓ | $2 = 2$ ✓

16. $(x+3)^2 = (\sqrt{4x+8})^2$

$x^2 + 6x + 9 = 4x + 8$

$x^2 + 2x + 1 = 0$

$(x+1)(x+1) = 0$

$x + 1 = 0$

$\boxed{x = -1}$

$(-1) + 3 = \sqrt{4(-1)+8}$

$2 = \sqrt{-4+8}$

$2 = \sqrt{4}$

$2 = 2$ ✓

17. $\sqrt{7x-54} - x = -6$ isolate radical

$(\sqrt{7x-54})^2 = (x-6)^2$

$7x - 54 = x^2 - 12x + 36$

$0 = x^2 - 19x + 90$

$0 = (x-9)(x-10)$

$x - 9 = 0$ $\quad x - 10 = 0$

$\boxed{x = 9}$ $\quad \boxed{x = 10}$

$\sqrt{7(9)-54} - (9) = -6$ | $\sqrt{7(10)-54} - (10) = -6$

$\sqrt{63-54} - 9 = -6$ | $\sqrt{70-54} - 10 = -6$

$\sqrt{9} - 9 = -6$ | $\sqrt{16} - 10 = -6$

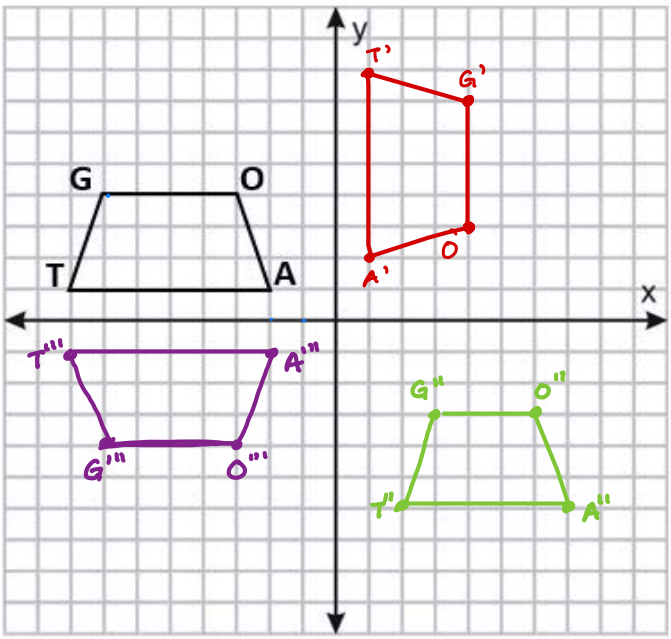
$3 - 9 = -6$ | $4 - 10 = -6$

$-6 = -6$ ✓ | $-6 = -6$ ✓

GO!

Topic: Transformations of Geometric Shapes.

Transform the trapezoid GOAT based on the directions in each problem. Write the new ordered pairs of each transformation below.



18. (x, y) → (y, -x)

G(-7,4) → G'(4, 7)
O(-3,4) → O'(4, 3)
A(-2,1) → A'(1, 2)
T(-8,1) → T'(1, 8)

19. (x, y) → (x + 10, y - 7)

G(-7,4) → G''(3, -3)
O(-3,4) → O''(7, -3)
A(-2,1) → A''(8, -6)
T(-8,1) → T''(2, -6)

20. (x, y) → (x, -y)

G(-7,4) → G'''(-7, -4)
O(-3,4) → O'''(-3, -4)
A(-2,1) → A'''(-2, -1)
T(-8,1) → T'''(-8, -1)

Transform the parallelogram FROG based on the directions in each problem. Write the new ordered pairs of each transformation below.

21. (x, y) → (-x, -y)

F(1, 8) → F'(-1, -8)
R(4, 8) → R'(-4, -8)
O(3, 2) → O'(-3, -2)
G(0, 2) → G'(0, -2)

22. (x, y) → (-x, y)

F(1, 8) → F''(-1, 8)
R(4, 8) → R''(-4, 8)
O(3, 2) → O''(-3, 2)
G(0, 2) → G''(0, 2)

23. (x, y) → (x + 3, y - 5)

F(1, 8) → F'''(4, 3)
R(4, 8) → R'''(7, 3)
O(3, 2) → O'''(6, -3)
G(0, 2) → G'''(3, -3)