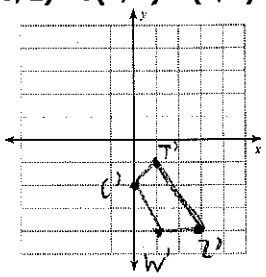
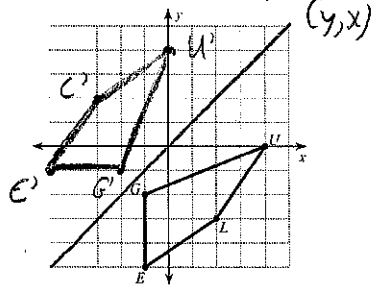
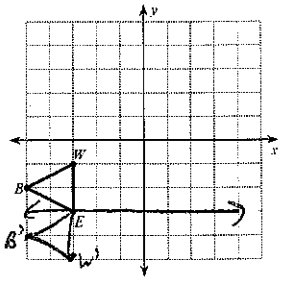
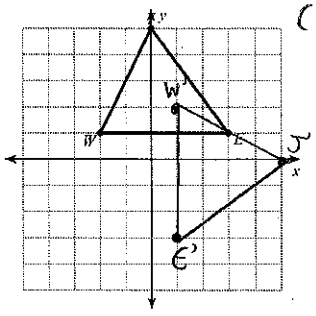
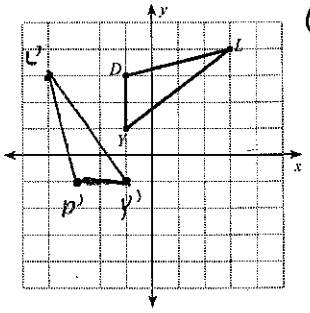
GSE Geometry | Unit #1 - Transformations | Review #2

Name: _____ Date: _____

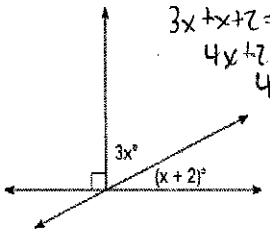
Use the following to review for you test. Work the Practice Problems on a separate sheet of paper.

What you need to know & be able to do	Things to remember	Problem	Problem
Translations	• Find the new coordinates by adding/ subtracting the given value. • Find the pre-image by doing the OPPOSITE.	**1.** Translate the following points by the rule: $(x,y) \rightarrow (x+1, y-4)$ S (-5, 2)→ (-4, -2) Y (-4, 5)→ (-3, 1) R (-1, 1)→ (0, -3) A (-4, -2)→ (-3, -6)	**2.** Translation: (x, y) → (x – 2, y – 6) **W(3, 2) C(2, 4) T(3, 5) Z(5,2)** 
Reflections	• Over x-axis: (x, -y) • Over y-axis: (-x, y) • Over y = x: (y, x) • Over y = -x: (-y, -x) • Reflection over any other line: PROTECT THE DISTANCE	**3.** Reflection over y = x (y, x) 	**4.** Reflection over y = -3 
Rotations	• 90CW/270CCW: (y, -x) • 180: (-x, -y) • 90CCW/270CW: (-y, x)	**5.** Rotate the figure 90° CW (y, -x) 	**6.** Rotate the figure 90° CCW (-y, x) 
Dilations	• Multiply the coordinates by the given scale factor (k)	**7.** Find the coordinates of the new vertices of the image that has been dilated by a factor of 5. S(-5, 2)→(-25, 10) Y (-4, 5)→ (-20, 25) R (-1, 1)→(-5, 5) A (-4, -2)→ (-20, -10)	**8.** Find the coordinates of the new vertices of the image that has been dilated by a factor of 1/2. W(3, 2)→ (3/2, 1) C(2, 4)→ (1, 2) T (3, 5)→(3/2, 5/2) Z (5, 2)→ (5/2, 1)
Glide Reflections and Combinations of Transformations	• Glide Reflection: Translation and Reflection • Rotation and Reflection • ORDER IS IMPORTANT • Use the *previous* ordered pairs to do the next transformation.	**9.** Given the points **M (-3, 1) S (5, -2)** Translate: (x – 3, y + 2) Reflect: y = -x M' → (-6, 3) M'' → (-3, 6) S' → (2, 0) S'' → (0, -2)	**10.** Given the points **K (0, -4) P (-6, -3) R (1, 2)** Reflect: over the x-axis Rotate: 270 CCW K' → (0, 4) K'' → (4, 0) P' → (-6, 3) P'' → (3, 6) R' → (1, -2) R'' → (-2, -1)

Solving for missing angles

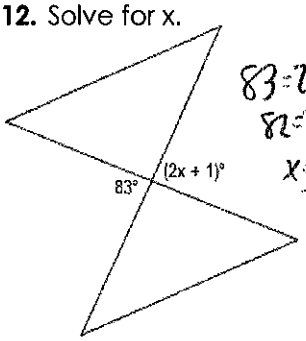
Linear Pair –
___ + ___ = 180°
Supplementary Angles
___ + ___ = 180°
Complementary Angles
___ + ___ = 90°
Vertical Angles
___ = ___
Alternate Interior Angles
___ = ___
Alternate Exterior Angles
___ = ___
Corresponding Angles
___ = ___
Consecutive Interior Angles
___ + ___ = 180°

11. Solve for x.



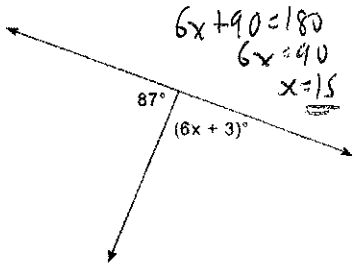
$3x + x + 2 = 90$
$4x + 2 = 90$
$4x = 88$
$x = 22$

12. Solve for x.



$83 = 2x + 1$
$82 = 2x$
$x = 41$

13.



$6x + 90 = 180$
$6x = 90$
$x = 15$

14. One of two supplementary angles is 98° greater than its supplement. Find the measure of both angles.

$\angle 1 = x = 41°$
$\angle 2 = x + 98 = 139°$
$2x + 98 = 180$
$2x = 82$
$x = 41$

15. $\angle 1$ and $\angle 2$ are complementary angles. Solve for x and the measure of both angles.

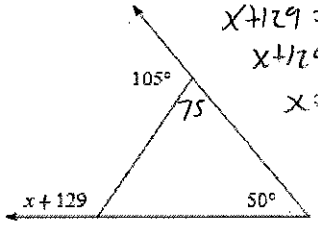
$\angle 1 = 7x + 20$ 41° $\angle 2 = 17x - 2$ 49°
$24x + 18 = 90$
$24x = 72$
$x = 3$

Sum of Interior & Exterior Angles

The sum of all interior angles is 180°.
$\angle 1 + \angle 2 + \angle 3 = 180°$

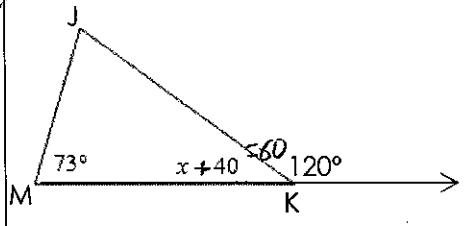
The sum of a straight line is 180°.

16. Solve for x = −4



$x + 129 = 75 + 50$
$x + 129 = 125$
$x = -4$

17. Solve for x = 20 and $\angle J$ = 47°

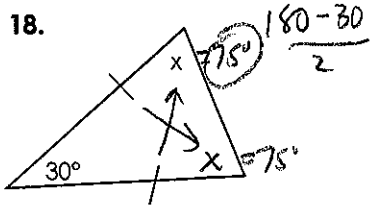


Base Angles

-If 2 angles in a triangle are congruent, then the sides opposite them are congruent.

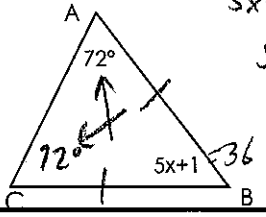
-If 2 sides in a triangle are congruent, then the angles opposite them are congruent.

18.



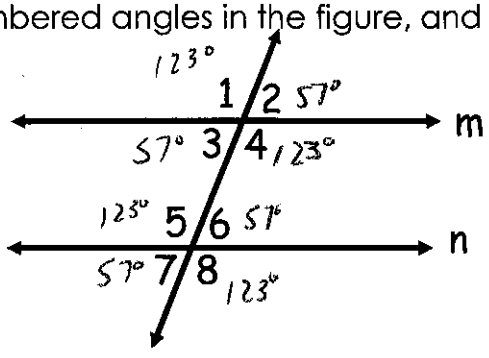
$180 - 30$
2

19. ΔABC is an isosceles triangle with AB and BC as the legs. Solve for x.



$5x + 1 = 36$
$5x = 35$
$x = 7$

20. Given $m \parallel n$, $m\angle 8 = 123°$, find the measures of all the numbered angles in the figure, and give the reason why (vocab in things to remember)



$m\angle 1$ = 123°, $m\angle 2$ = 57°, $m\angle 3$ = 57°
alt. exterior $\measuredangle$s cons. interior $\measuredangle$s vertical angles with $\measuredangle$ 2

$m\angle 4$ = 123°, $m\angle 5$ = 123°, $m\angle 6$ = 57°, $m\angle 7$ = 57°
Corresponding $\measuredangle$s vertical $\measuredangle$s linear pair linear pair