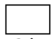
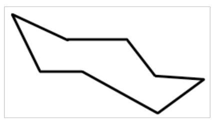
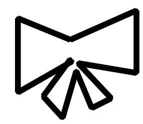
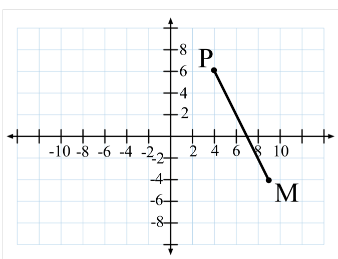
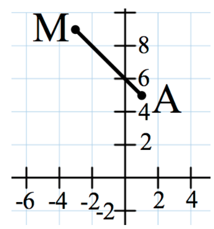
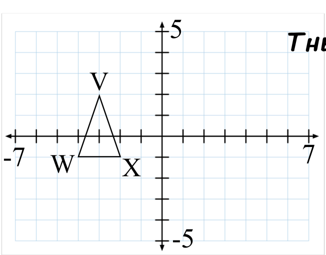
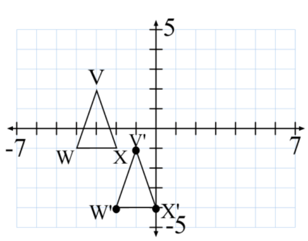
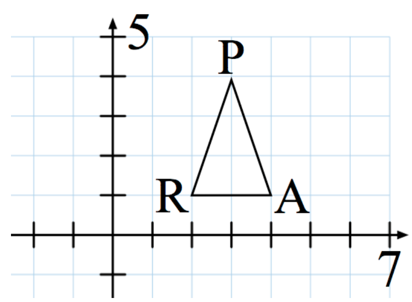
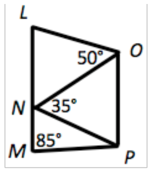
Name: ______________________________ Per: _____

Geometry: 1st Semester Benchmark Exam
Example Sheet 3

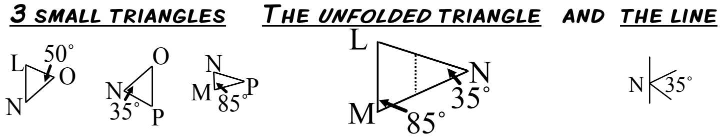
Study Guide Problem & Solution		New Example
The rectangular tiles on the floor are 5 in. wide and 6 in. long. If there are 50 tiles on the floor, what is the area of the tile floor? *Find the area of one tile.*  5 in. 6 in. $A_t = bh = (6)(5)$ $A_t = 30 \text{ in}^2$ *Multiply the area of one tile by the number of tiles (50).* A= (30)(50) = *1500in²*	31	The rectangular tiles on the floor are 3 in. wide and 7 in. long. If there are 40 tiles on the floor, what is the area of the floor?
Tell whether the figure is a polygon. If it is a polygon, name it by the number of its sides.  *The figure is closed and has straight sides—* *YES, it's a polygon. 8 sides means it's an OCTAGON.*	32	Tell whether the figure is a polygon. If it is a polygon, name it by the number of sides. 
Find the coordinates of the midpoint of $\overline{PM}$ with endpoints $P(4, 6)$ and $M(9, -4)$.  $(M_x, M_y) = \left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$ $= \left(\frac{4+9}{2}, \frac{6+-4}{2}\right)$ $= \left(\frac{13}{2}, \frac{2}{2}\right)$ $= (6.5, 1)$ *or* $\left(\frac{13}{2}, 1\right)$	33	Find the coordinates of the midpoint of $\overline{AM}$ with endpoints $A(1, 5)$ and $M(-3, 9)$. 
Draw the image of ΔVWX after the translation $(x, y) \rightarrow (x + 2, y - 3)$.  *The rule tells us to add 2 to each x (move it 2 units right) and to subtract 3 from each y (move it 3 units down)* *Change each point (use the rule), then graph the image* *V(-3, 2) → (-3 + 2, 2 - 3) → V'(-1, -1)* *W(-4, -1) → (-4 + 2, -1 - 3) → W'(-2, -4)* *X (-2, -1) → (-2 + 2, -1 - 3) → X'(0, -4)* 	34	Draw the image of ΔPAR after the translation $(x, y) \rightarrow (x - 4, y + 1)$. 

Laura folded a triangular sheet of paper into the shape shown. Find $m\angle NLO$, given $m\angle LON = 50°$, $m\angle ONP = 35°$, and $m\angle NMP = 85°$.



Start by breaking it up into simpler figures–3 small triangles, 1 big triangle (unfold it), and a line. Work with any of these figures—choose one that can be solved.

3 small triangles   The unfolded triangle   and   the line



$$m\angle L + m\angle M + m\angle N = 180°$$

The unfolded triangle is only missing one angle— $\angle L$, the one we're looking for.

(triangle adds to equal 180)

$$m\angle L + 85° + 35° = 180°$$
$$m\angle L + 120° = 180°$$
$$m\angle L = 60°$$

$m\angle NLO = 60$

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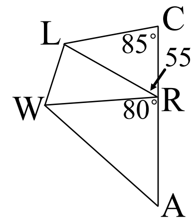
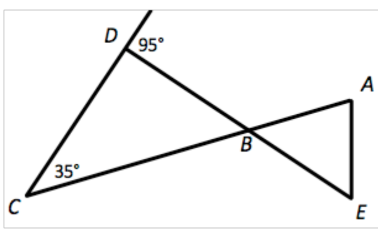
Frank folded a triangular sheet of paper into the shape shown. Find $m\angle RAW$, given $m\angle LCR = 85°$, $m\angle CRL = 55°$, and $m\angle ARW = 80°$.



What is $m\angle ABE$?



Find $m\angle CDB$. It's forms a linear pair with the 95° angle.

$m\angle CDB = 180° – 95° = 85°$

Find m<DBC. Since we know two angles in the triangle ($m\angle CDB = 85°$ & $m\angle DCB = 35°$), we can find the third.

$85° + 35° = 120°$ $m\angle DBC = 180° – 120° = 60°$

Since $\angle DBC$ & $\angle ABE$ are vertical angles, they're congruent. So, $m\angle DBC = m\angle ABE =$ <u>60°</u>

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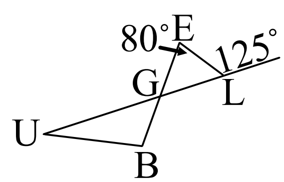
What is $m\angle BGU$?



Find the measure of each exterior angle of a regular octagon.

The exterior angle sum of any regular polygon is 360°. An octagon has 8 sides & 8 angles. To find the measure of ONE of the angles, divide the total (360°) by the number of angles (8). $360° \div 8 =$ <u>45°</u>

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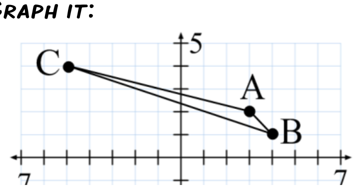
Find the measure of each exterior angle of a regular dodecagon.

What type of triangle is formed by the points A(3, 2), B(4, 1), and C(-5, 4)? (right, equilateral, isosceles, or scalene)

Graph it:



All of the sides are different, so <u>Scalene</u>.

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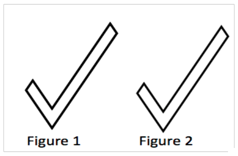
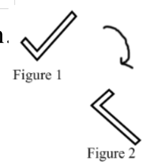
What type of triangle is formed by the points A(0, 3), B(2, -1), and C(-4, 0)? (right, equilateral, isosceles, or scalene)

Identify the transformation from figure 1 to figure 2. For each INCORRECT response, draw or describe what figure 2 would look like.



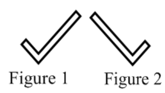
a) The transformation is a 90° rotation.

No!

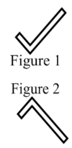


b) The transformation is a reflection.

No!



OR



c) THE TRANSFORMATION IS A TRANSLATION.

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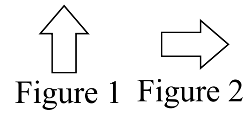
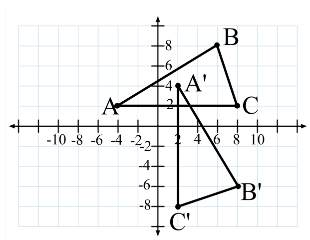
Identify the transformation from figure 1 to figure 2. For each INCORRECT response, draw or describe what figure 2 would look like.



a) The transformation is a 90° rotation.
b) The transformation is a reflection.
c) The transformation is a translation.

A figure has vertices at $A(-4, 2)$, $B(6, 8)$, & $C(8, 2)$. After a transformation, the image of the figure has vertices at $A'(2, 4)$, $B'(8, -6)$, & $C'(2, -8)$. Identify the transformation.



a) THE TRANSFORMATION IS A 90° ROTATION.
b) The transformation is a 180° rotation.
c) The transformation is a reflection.
d) The transformation is a translation.

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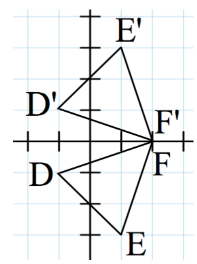
A figure has vertices at $D(-1, -1)$, $E(1, -3)$, & $F(2, 0)$. After a transformation, the image of the figure has vertices at $D'(-1, 1)$, $E'(1, 3)$, & $F'(2, 0)$. Identify the transformation.



a) The transformation is a 90° rotation.
b) The transformation is a 180° rotation.
c) The transformation is a reflection.
d) The transformation is a translation.