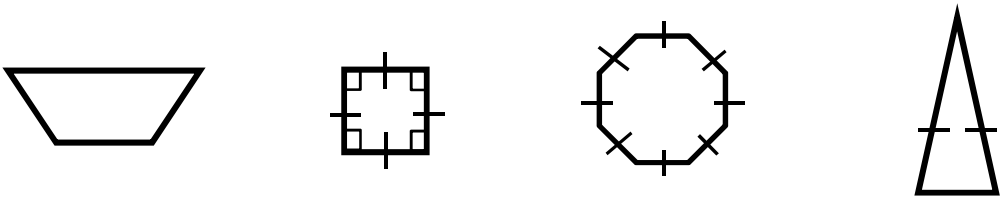
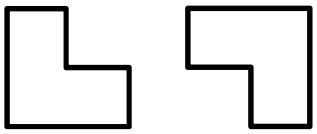
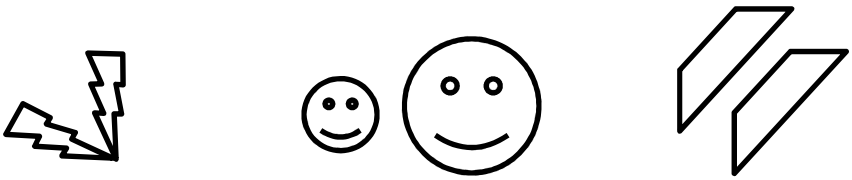
Accelerated Review 9: **Geometric Relationships** Name:

For full credit, show all work.

Study all geometry vocabulary words from your chapter packet.

1.	Caleb drew a quadrilateral on his paper. Which of the following must be true about his drawing? A The drawing must have opposite sides parallel. B The drawing must have four vertices. C The drawing must be a rectangle. D The drawing must be a regular polygon.	
2.	Which of the following could be a parallelogram? A 3 in, 4 in, 5 in, 6 in B 5 in, 5 in, 10 in, 12 in C 4 in, 8 in, 12 in, 8 in D 6 in, 6 in, 9 in, 9 in	
		
3.	Which statement is not true about the shape on the far left? A It has two obtuse angles. B It has two acute angles. C It has two sides that are parallel. D It is a parallelogram.	
4.	Which statement is true about the second shape from the left? A It has exactly two vertices. B Its angles add up to exactly 180 degrees. C It is a rectangle. D It is a trapezoid.	
5.	Which statement is not true about the third shape from the left? A It is a regular octagon. B It has a total of 14 sides and vertices. C It is possible to draw more than 10 diagonals. D Its angles add up to more than 500 degrees.	
6.	Which statement is true about the shape on the far right? A It has two obtuse angles. B It has one acute angle. C It is an equilateral triangle. D It is an isosceles triangle.	

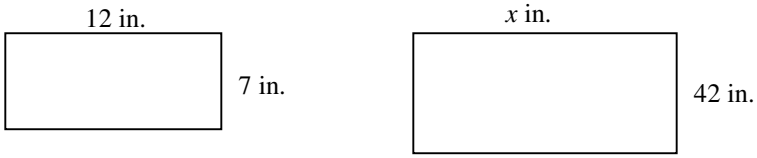
7.	Assuming all angles below are multiples of 90, which statement is true about the following shapes?  A Total sides = 16 C The shapes are similar. B Total right angles = 12 D Total vertices = 10	
8.	Which of the following is not shown in the transformations below?  A Reflection B Rotation C Dilation D Translation	

Circle Always, Sometimes, or Never.

9.	Pentagons are regular polygons.	Always	Sometimes	Never
10.	Squares are rectangles.	Always	Sometimes	Never
11.	Rhombi are rectangles.	Always	Sometimes	Never
12.	Congruent figures are similar figures.	Always	Sometimes	Never

13.	If the corresponding angles of 2 polygons are congruent and the lengths of the corresponding sides of the polygons are proportional, the polygons are A rectangular C congruent B symmetric D similar	
14.	Ms. Johnsen believes that all squares are parallelograms. Which of the following supports or rejects her belief? A She is incorrect because parallelograms do not always have right angles. B She is correct because both squares and parallelograms have 4 sides. C She is incorrect because only squares must have all sides the same length. D She is correct because all squares have opposite sides parallel.	
15.	Which of the following is not true about similar figures? A Similar figures always have the same shape. B Similar figures always have the same size. C Similar figures always have corresponding angles that are equal. D Similar figures always have corresponding sides that are proportional.	

16. Using a proportion, determine the length of the missing side assuming the two shapes are similar.



Proportion

Answer

17. You want to translate polygon RSTV so that vertex T is moved from coordinate $(4,-1)$ to coordinate $(-4,1)$. Write in words the steps that would be used for this translation (ex. move up/down/left/right so many units).

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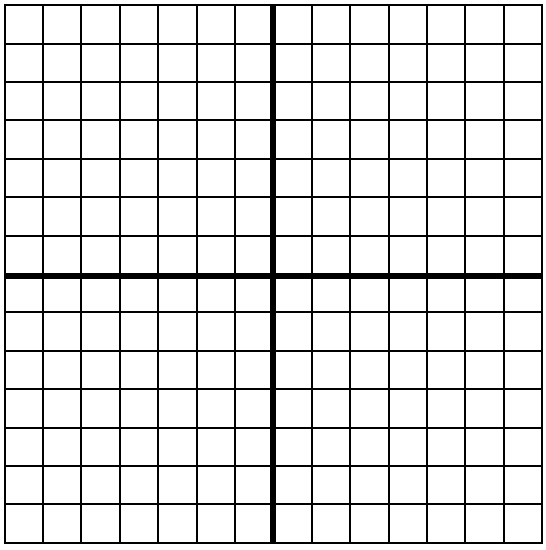
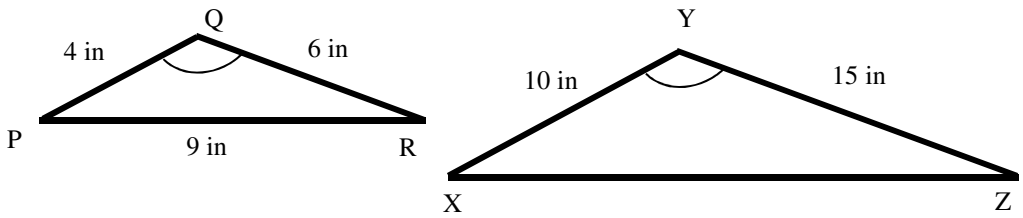
Draw triangle XYZ below. Triangle XYZ has vertices at $(2,-1)$, $(4,3)$, and $(-1,1)$.

18. Graph a reflection of triangle XYZ across the horizontal axis. Label the new triangle $X'Y'Z'$.

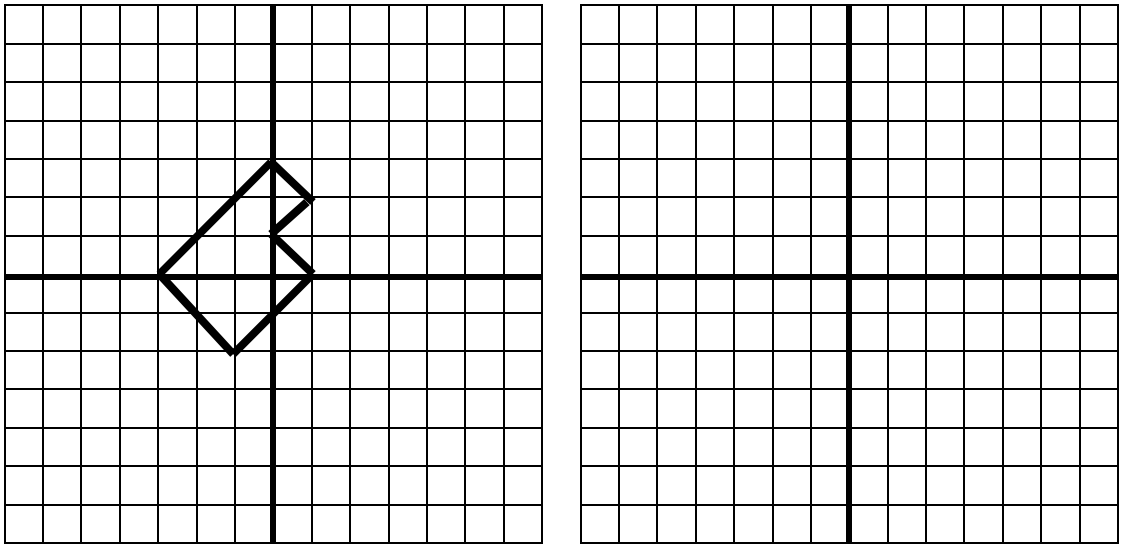
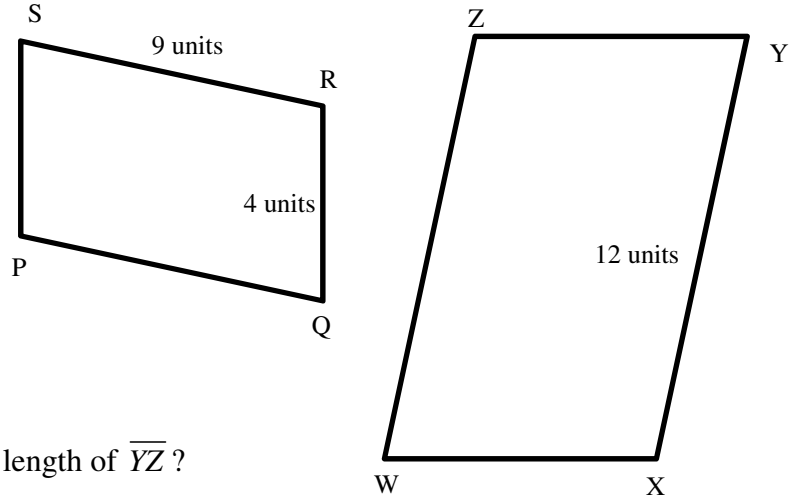
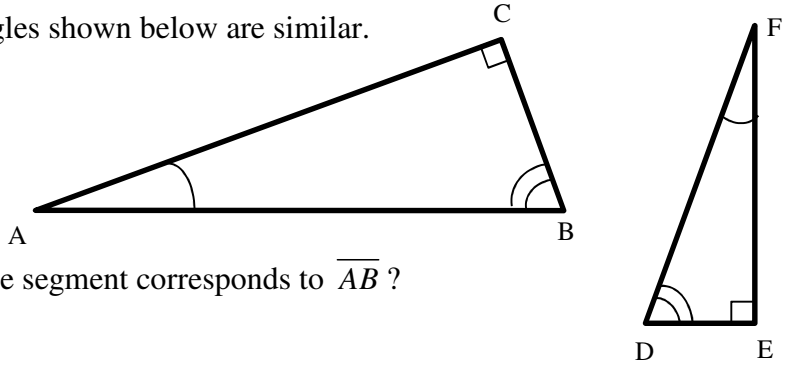
19. Graph a translation of triangle XYZ to the left 4 units and up 3 units. Label the new triangle $X''Y''Z''$.

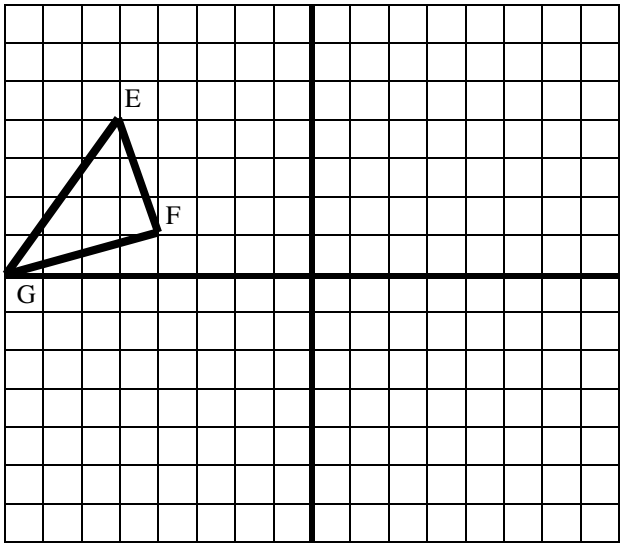


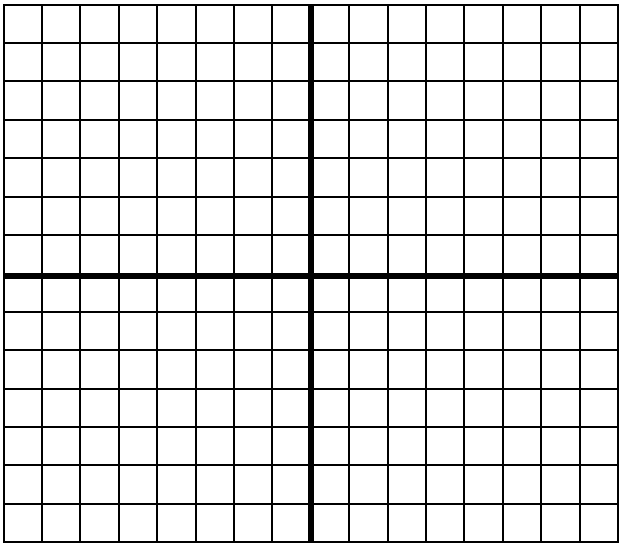
20. Triangle PQR is similar to triangle XYZ.

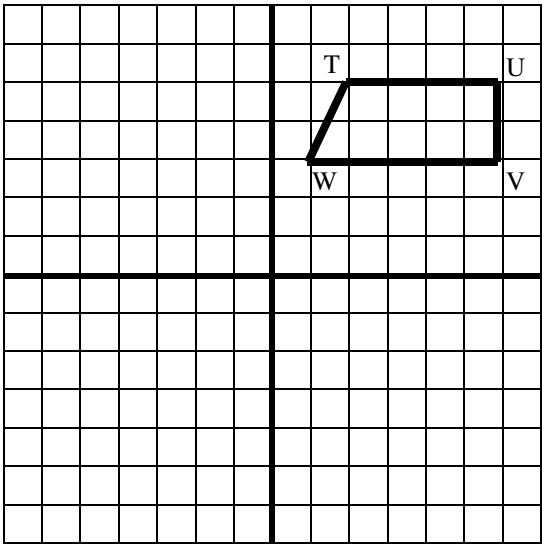


What is the length of $\overline{XZ}$?

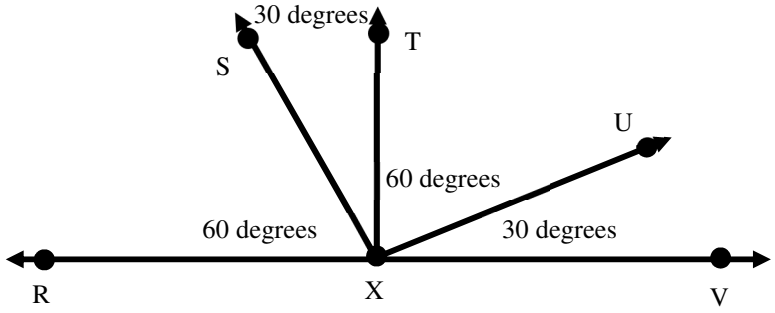
21.	Draw a reflection of this figure across the y-axis. 	
22.	Parallelogram PQRS is similar to parallelogram WXYZ.  What is the length of $\overline{YZ}$?	
23.	The triangles shown below are similar.  Which line segment corresponds to $\overline{AB}$?	
24.	A rectangle has side lengths of $4\frac{1}{2}$ by $7\frac{1}{2}$ inches. This rectangle is dilated by a scale factor of $\frac{2}{3}$ to create a new rectangle. What are the side lengths of the new rectangle?	





25.	Triangle EFG is shown on the left grid above. If triangle *EFG* is reflected across the *x*-axis to form triangle $E'F'G'$, write an ordered pair that represents the coordinates of F'	
26.	The vertices of a triangle are $(-1,5)$, $(-4,1)$, and $(-3,6)$. On the right grid above draw the original triangle and the result of reflecting the triangle across the *y*-axis.	
27.	Figure TUVW is shown on the grid below. Translate TUVW 8 units down and 4 units to the left to form the image $T'U'V'W'$. 	
28.	Determine the angles of a triangle with angles of $x°$, $(x-6)°$ and $2x°$.	Equation Angles

29.



Name two angles which are complementary. Use notation such as $\angle ABC$.
Name two angles which are supplementary. Use notation such as $\angle ABC$.

Complementary

Supplementary

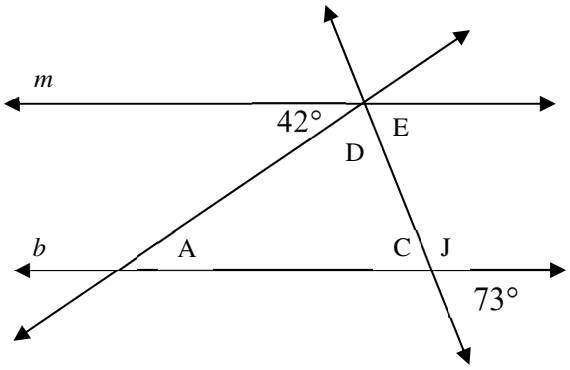
30. Two angles are supplementary. The first angle is 3x degrees. The second angle is (5x + 20) degrees. Determine the measure of each angle.

Equation

Angles

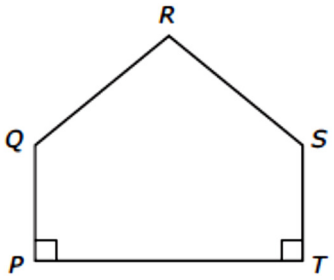
31. In the figure below $m \parallel b$. Based on angle relationships, determine the measure of each angle based on the given angle.

$\angle A$	
$\angle C$	
$\angle D$	
$\angle E$	
$\angle J$	

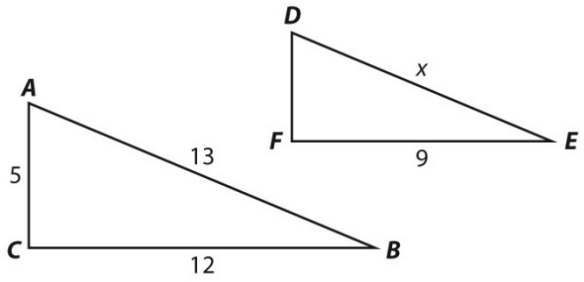
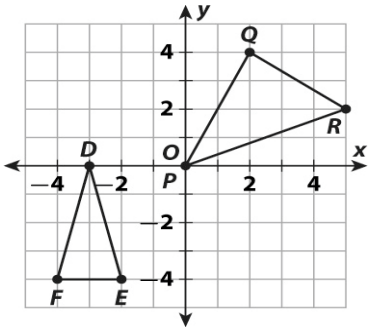


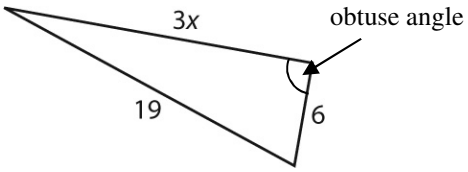
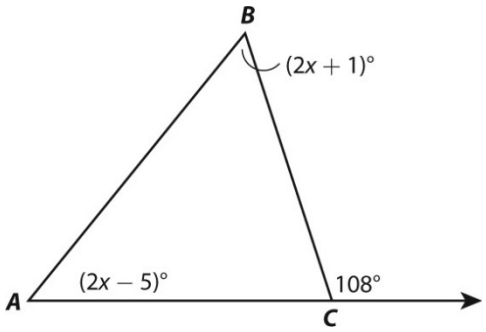
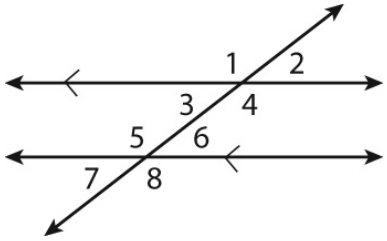
32. The measure of $\angle W$ is 53°. What is the measure, in degrees, of the angle that is complementary to $\angle W$?

33. Pentagon PQRST below models one side of a building.



The sum of the interior angles of the pentagon is 540°, the measure of angle Q is 125°, and $\angle Q \cong \angle S$. What is the measure of $\angle R$?

34.	The two right triangles below are similar. What is x, the missing side length in triangle DEF?  	
35.	A rectangle 18 in. wide is twice that long. Which of these describes a similar rectangle? A 8in x 18in B 9in x 12in C 12in x 18in D 15in x 30in	
36.	**Use the triangles below to answer the next 4 questions.**  Translate ΔDEF five units to the right.	D'(_____), E'(_____), F'(_____)
37.	Reflect ΔDEF across the x-axis. Which point does not move?	
38.	Apply the transformation below to ΔDEF . $(x, y) \rightarrow (-x, y)$	D'(_____), E'(_____), F'(_____)
39.	Apply the translation below to ΔDEF . $(x, y) \rightarrow (x - 10, y + 8)$	D'(_____), E'(_____), F'(_____)
40.	The vertices of a trapezoid are located at $(1,-2),(3,-1),(3,-5)$ and $(1,-4)$. The trapezoid is translated 3 units to the left and then rotated $180°$ about the origin. What are the coordinates of its image? A $(-2,-2),(0,-1),(0,-5),(-2,-4)$ B $(2,2),(0,1),(0,5),(2,4)$ C $(-1,-2),(-3,1),(-3,5),(-1,4)$ D $(-1,0),(-3,1),(0,5),(-1,4)$	

41.	Which could be the value of x in the triangle below?  A 9 B 8 C 6 D 4	
42.	What is the measure of $\angle B$?  	
43.	**Use the figure to answer the next 2 questions.**  Which pair of angles are alternate exterior angles? A $\angle 7$ and $\angle 4$ C $\angle 8$ and $\angle 1$ B $\angle 2$ and $\angle 6$ D $\angle 2$ and $\angle 8$	
44.	Which of these angles is **not** congruent to $\angle 5$? A $\angle 8$ B $\angle 6$ C $\angle 1$ D $\angle 4$	
45.	In the diagram below, $\angle DBC$ measures 5 degrees less than $\angle C$, and $\angle D$ measures 8 degrees more than $\angle C$. What is the measure of $\angle DBA$?