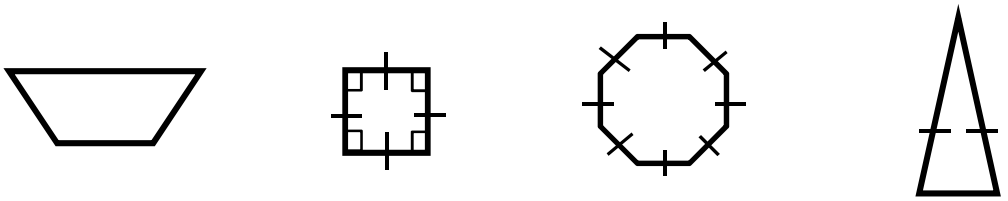
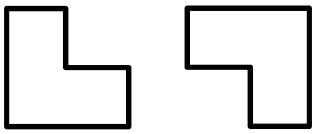
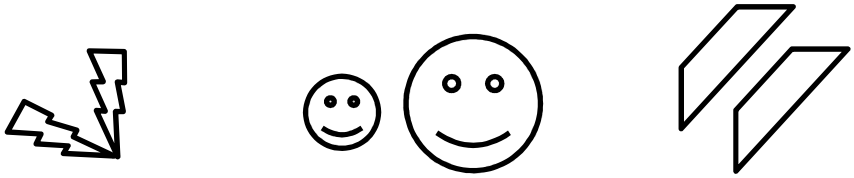
Accelerated Review 9: **Geometric Relationships** Name:

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.	B
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	D
		
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.	D
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.	C
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.	B
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.	D

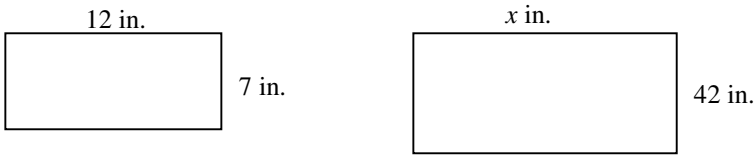
7.	Which statement is true about the following shapes?  A Total sides = 16 B Total right angles = 12 C The shapes are similar. D Total vertices = 10	C
8.	Which of the following is not shown in the transformations below?  A Reflection B Rotation C Dilation D Translation	A

Circle Always, Sometimes, or Never.

9.	Pentagons are regular polygons.	Always	<u>Sometimes</u>	Never
10.	Squares are rectangles.	<u>Always</u>	Sometimes	Never
11.	Rhombi are rectangles.	Always	<u>Sometimes</u>	Never
12.	Congruent figures are similar figures.	<u>Always</u>	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 B symmetric C congruent D similar	D
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.	D
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.	B

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



Proportion

$$\frac{12}{x}=\frac{7}{42}$$

Answer

$x = 72$ in

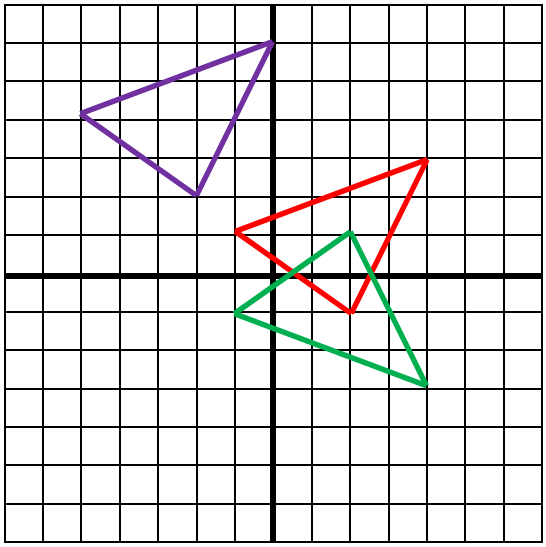
17. You want to translate polygon RSTV so that vertex T is moved from coordinate $(4,-1)$ to coordinate $(-4,1)$. Write in words the steps that would be used for this translation (ex. move up/down/left/right so many units).

- Move left 8
- Move up 2

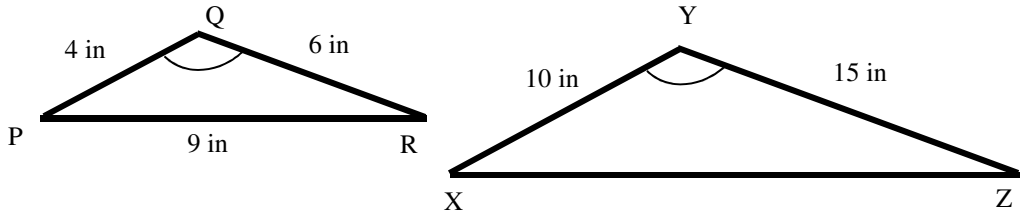
Draw triangle XYZ below. Triangle XYZ has vertices at $(2,-1)$, $(4,3)$, and $(-1,1)$.

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 $X''Y''Z''$.



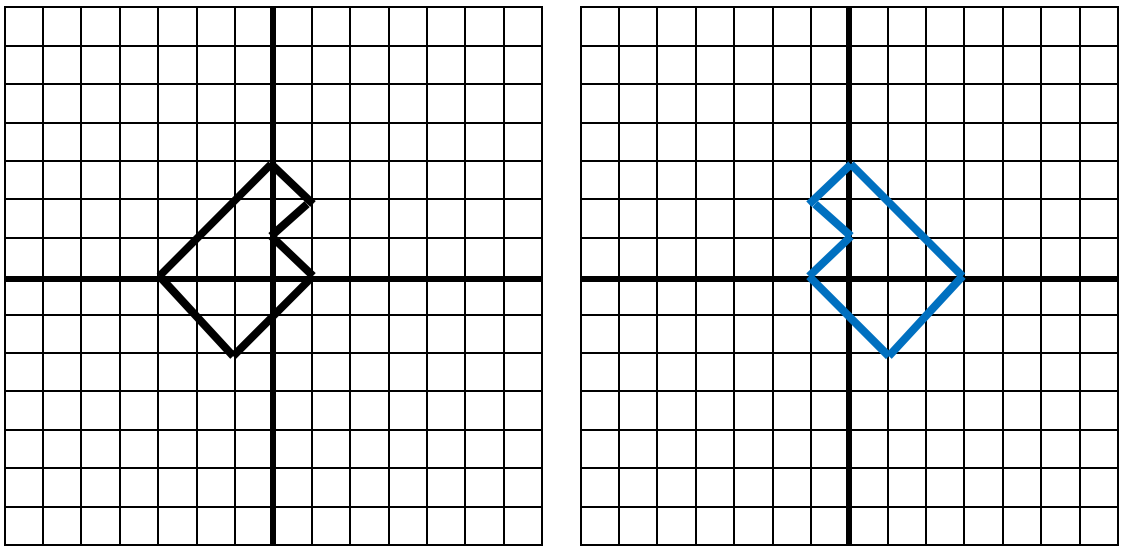
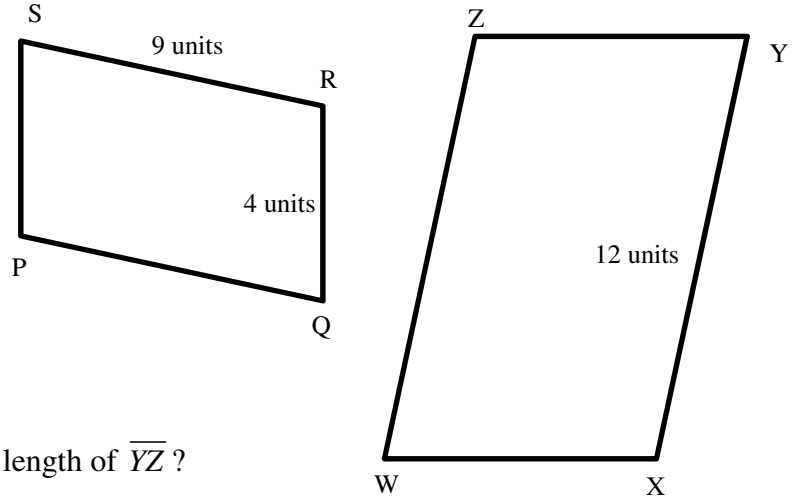
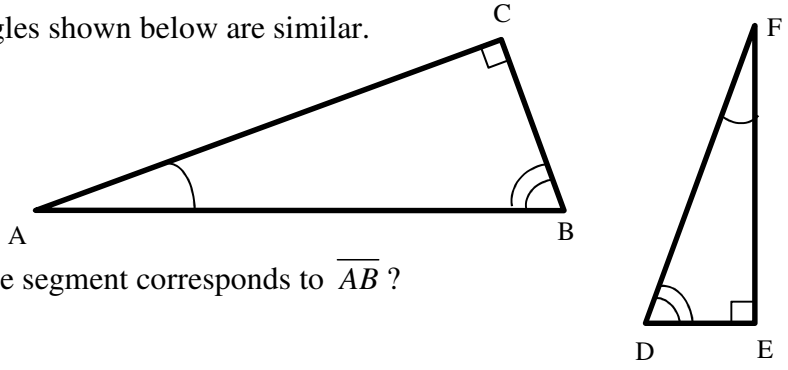
20. Triangle PQR is similar to triangle XYZ.

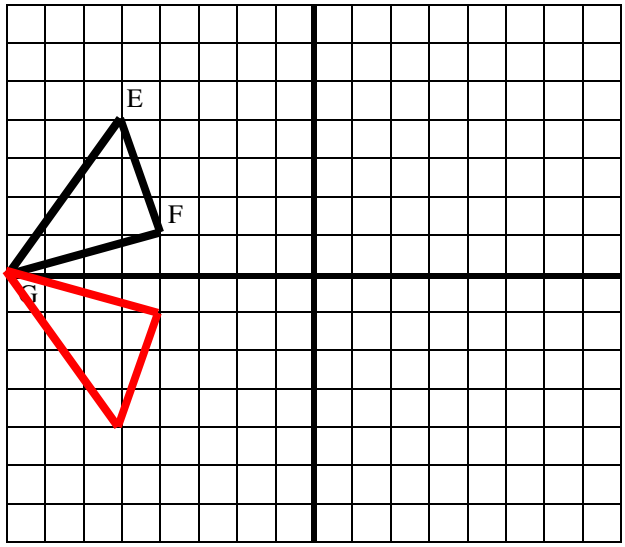


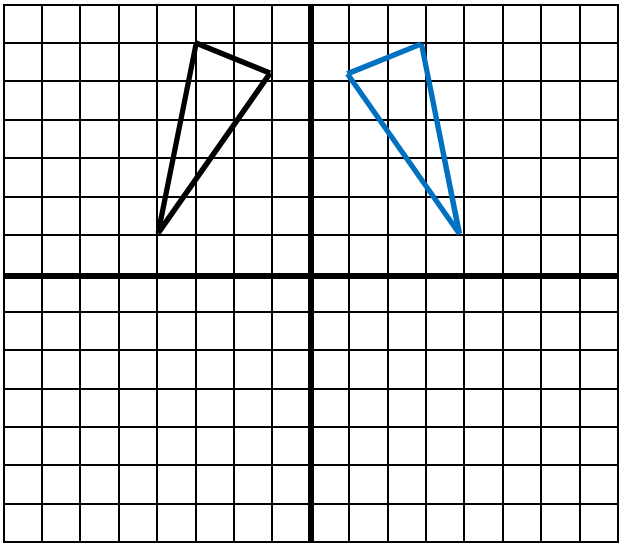
What is the length of $\overline{XZ}$?

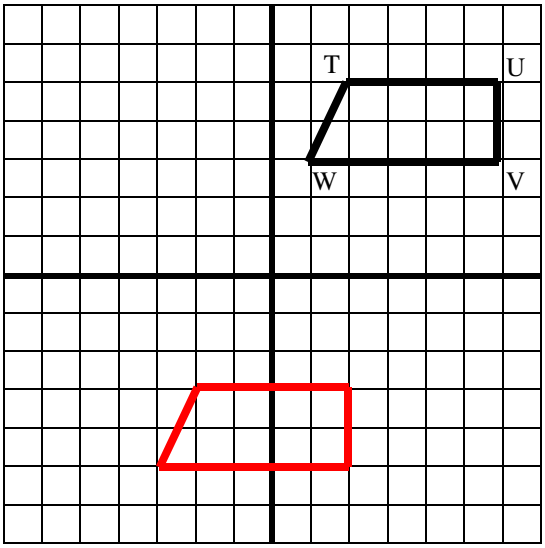
$$\frac{4}{10}=\frac{9}{x}$$

$x = 22.5$ in

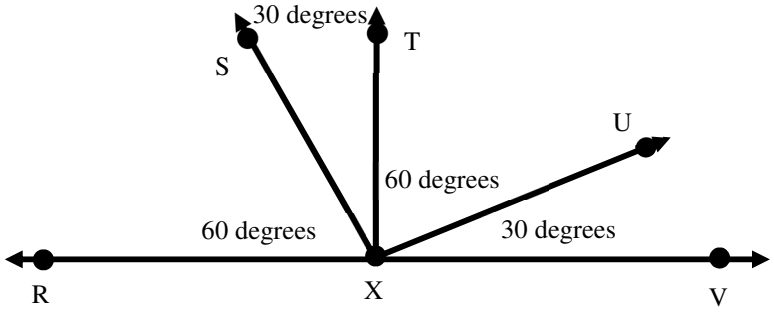
21.	Draw a reflection of this figure across the y-axis. 	
22.	Parallelogram PQRS is similar to parallelogram WXYZ.  What is the length of $\overline{YZ}$?	$\frac{9}{12}=\frac{4}{x}$ $x=5\frac{1}{3}$ units
23.	The triangles shown below are similar.  Which line segment corresponds to $\overline{AB}$?	$\overline{FD}$
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?	3 x 5





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'	$(-4,-1)$
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 $x+x-6+2x=180$ Angles $40.5°, 46.5°, 93°$

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

$\angle RXS$ & $\angle SXT$
$\angle SXT$ & $\angle TXU$
$\angle TXU$ & $\angle UXV$

Supplementary

$\angle RXS$ & $\angle SXV$
$\angle RXT$ & $\angle TXV$
$\angle RXU$ & $\angle UXV$

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

$3x + (5x + 20) = 180$

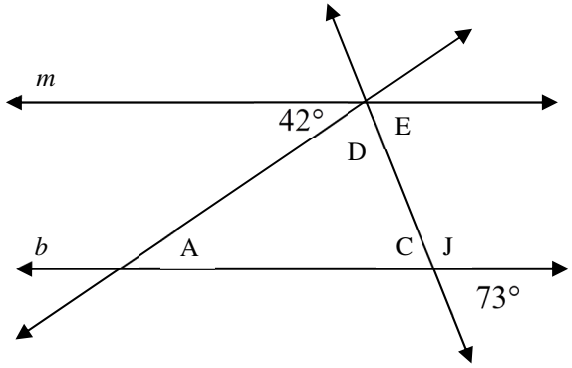
Angles

60°,120°

31.

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

$\angle A$	42°
$\angle C$	73°
$\angle D$	65°
$\angle E$	73°
$\angle J$	107°



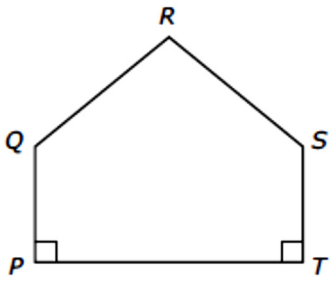
32.

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

37°

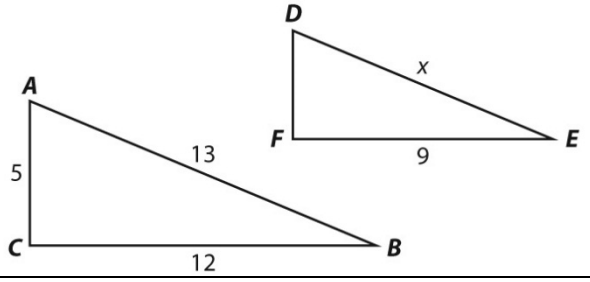
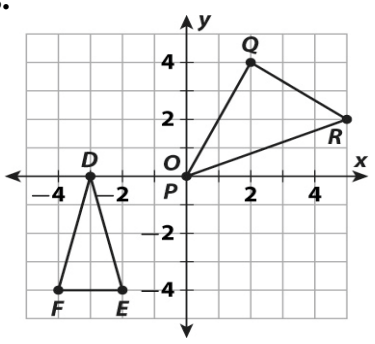
33.

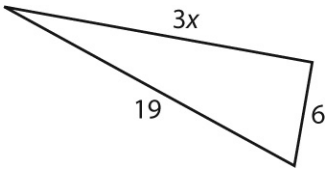
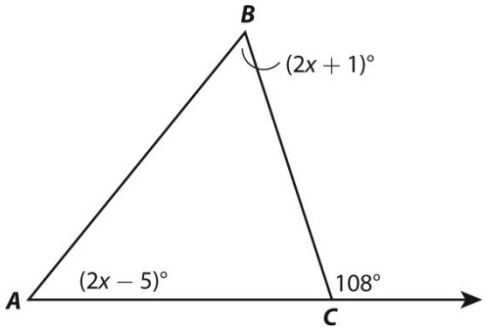
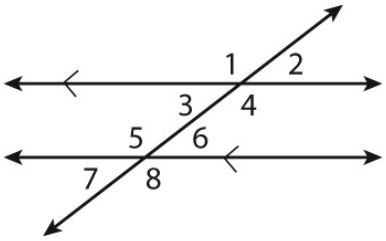
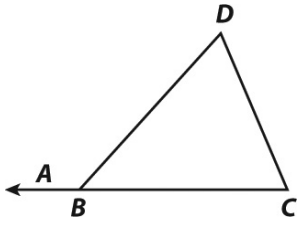
Pentagon PQRST below models one side of a building.



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 $\angle R$?

110°

34.	The two right triangles below are similar. What is *x,* the missing side length in triangle *DEF*?  	$\frac{12}{9}=\frac{13}{x}$ $x=9\frac{3}{4}$ units
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	D
36.	**Use the triangles below to answer the next 4 questions.**  Translate ΔDEF five units to the right.	$D'(2,0),\ E'(3,-4),\ F'(1,-4)$
37.	Reflect ΔDEF across the *x*-axis. Which point does not move?	D
38.	Apply the transformation below to ΔDEF . $(x, y) \rightarrow (-x, y)$	$D'(3,0),\ E'(2,-4),\ F'(4,-4)$
39.	Apply the translation below to ΔDEF . $(x, y) \rightarrow (x-10, y+8)$	$D'(-13,8),\ E'(-12,4),\ F'(-14,4)$
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 $(-1,0),(-3,1),(0,5),(-1,4)$	B

41.	Which could be the value of x in the triangle below?  A 9 B 8 C 6 D 4	C
42.	What is the measure of $\angle B$? 	57°
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 $\angle 8$	C
44.	Which of these angles is **not** congruent to $\angle 5$? A $\angle 8$ B $\angle 6$ C $\angle 1$ D $\angle 4$	B
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 $\angle DBA$? 	126°