Study Guide for Geometric Shapes/Transformations

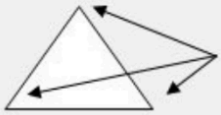
1. *Polygons* can be regular or irregular

Polygons	- Two-dimensional - Closed shape - Straight sides
Regular Polygons	- All sides are the same length - All angles are the same
Irregular Polygons	- Not all sides are the same length and/or - Not all angles are the same

2. Shapes can be classified by their number of sides and vertices

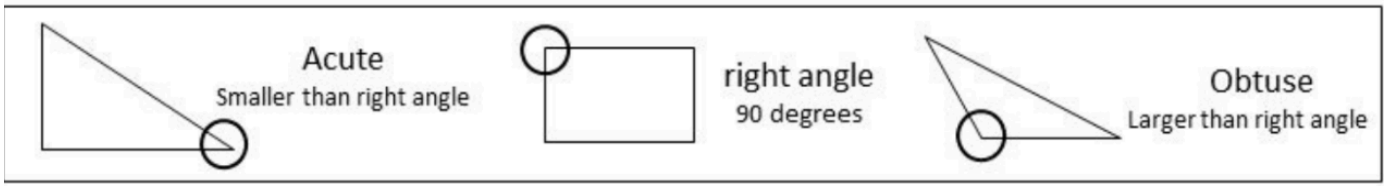
   # of sides = # of vertices

Vertices are where two sides meet. The vertices of a shape are the corners.

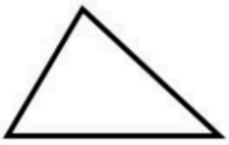
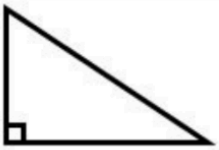
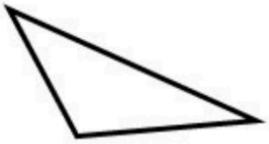


Name of Shape	Number of Sides
Hexagon	6
Pentagon	5
Triangle	3
Quadrilateral	4
Octagon	8

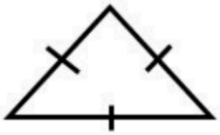
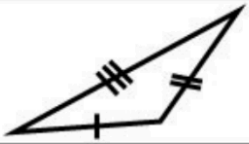
3. Angles can be named in shapes



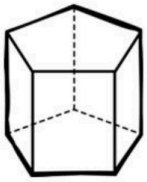
4. Triangles can be labeled as <u>acute</u>, <u>right</u>, or <u>obtuse</u>

Acute Triangle	Right Triangle	Obtuse Triangle
		
All Angles Are Less Than 90°	1 Angle Is 90°	1 Angle Is Greater Than 90°

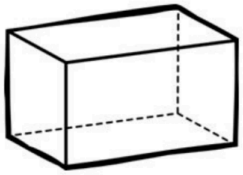
5. Triangles can be labelled as <u>equilateral</u>, <u>isosceles</u>, or <u>scalene</u>

Equilateral Triangle	Isosceles Triangle	Scalene Triangle
		
3 Equal Sides 3 Equal Angles	2 Equal Sides 2 Equal Angles	No Equal Sides No Equal Angles

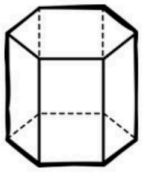
6. Prisms can be classified by their number of <u>faces</u>, <u>edges</u>, and <u>vertices</u>.



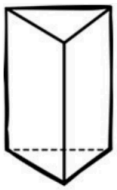
Faces	
Edges	
Vertices	
Name	



Faces	
Edges	
Vertices	
Name	

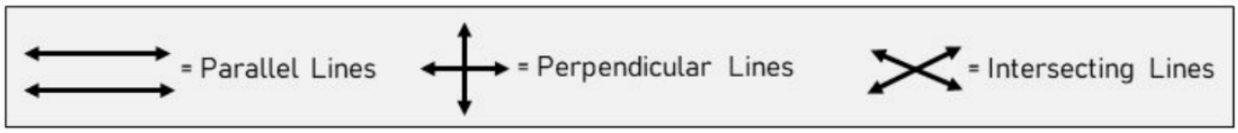


Faces	
Edges	
Vertices	
Name	

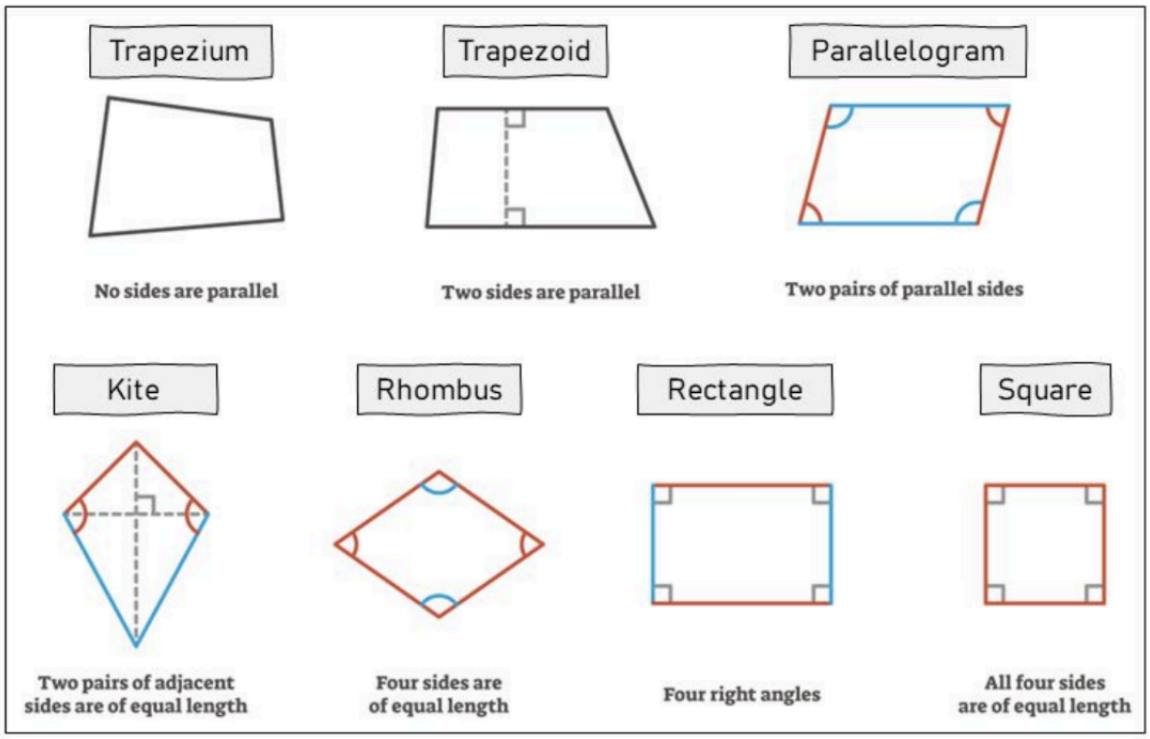


Faces	
Edges	
Vertices	
Name	

7. Lines can be <u>parallel</u>, <u>intersecting,</u> or <u>perpendicular</u>



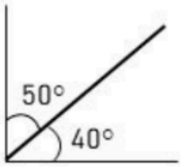
8. There are several types of quadrilaterals



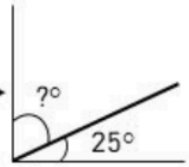
9. Determining <u>complimentary</u> angles

Complimentary Angles are two angles that add up to 90°. Therefore, the angles 40° and 50° are complementary angles because they add up to 90°. Together, complimentary angles add up to make a <u>right angle.</u>

<u>Example:</u>



We can determine the missing complimentary angle by subtracting the known angle from 90.

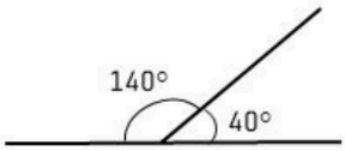


90 – 25 = ?
? = 65

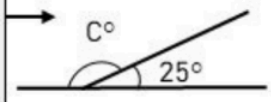
10. Determining <u>supplementary</u> angles

Supplementary Angles are two angles that add up to 180°. You will notice that two supplementary angles make a straight angle of 180°.

Example:



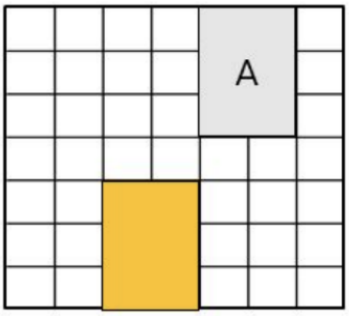
We can determine the missing supplementary angle by subtracting the known angle from 180.



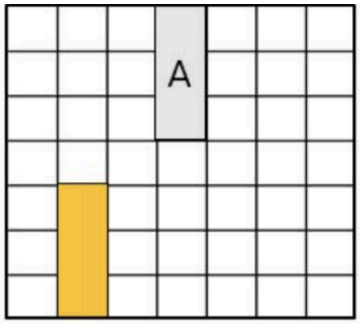
180 – 25 = ?
C = 155

11. There are 3 types of transformations:
    a. <u>slide</u> - <u>Translate</u>
    b. <u>Flip</u> - <u>Reflect</u>
    c. <u>Turn</u> - <u>Rotate</u>

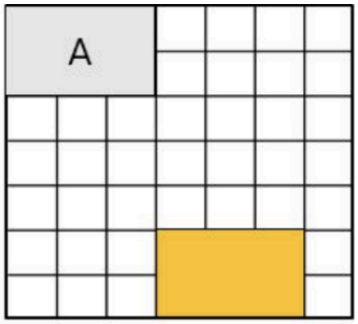
12. Describing <u>translations</u> using words.
    Shape A is the original object
    First Left/Right, **Then** Up/Down



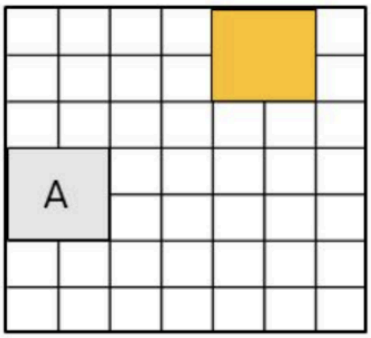
1) 2 left, 4 down



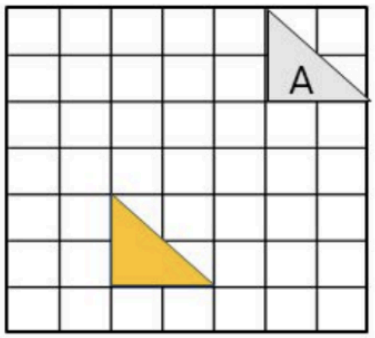
2) _____



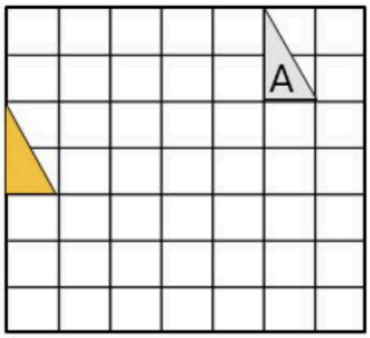
3) _____



4) _____

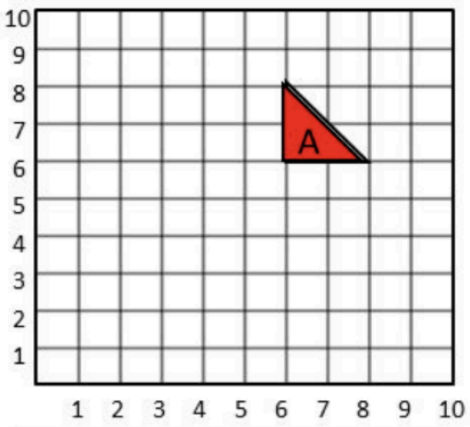


5) _____

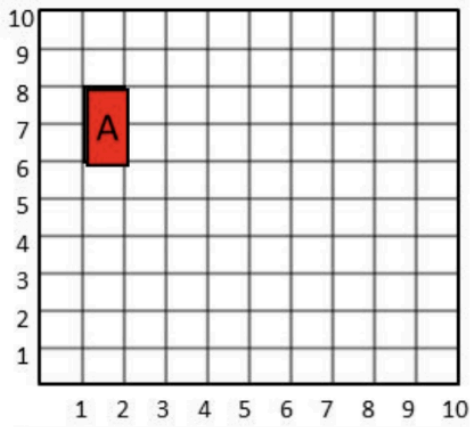


6) _____

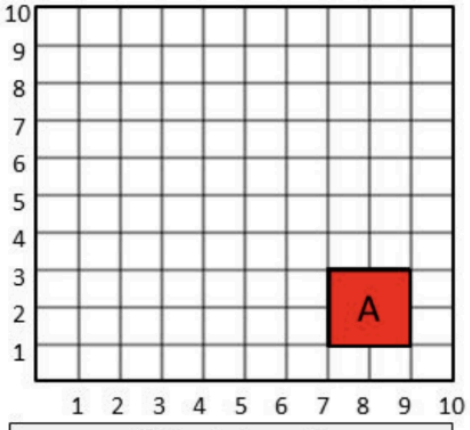
13. Performing <u>translations</u>



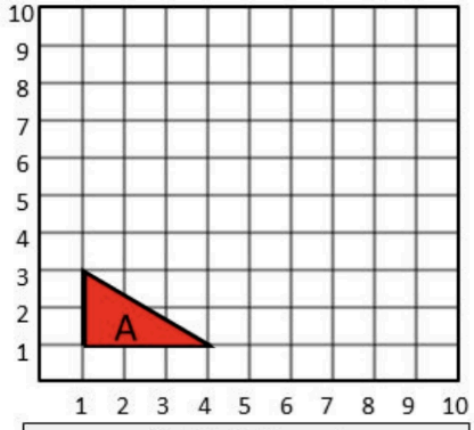
1) Left 4, down 3



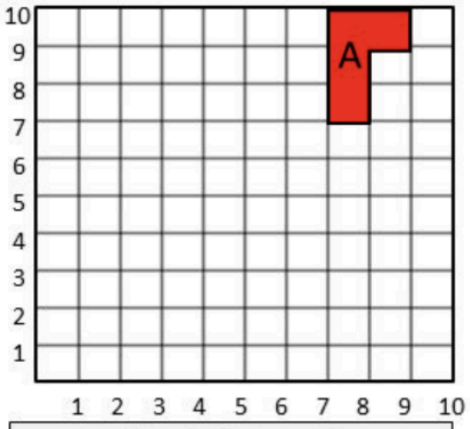
2) Right 5, down 4



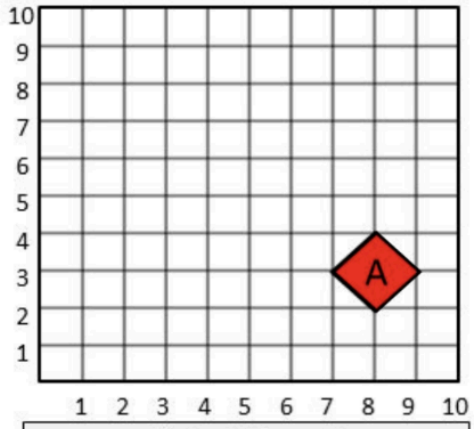
3) Left 6, up 2



4) Right 5, up 5

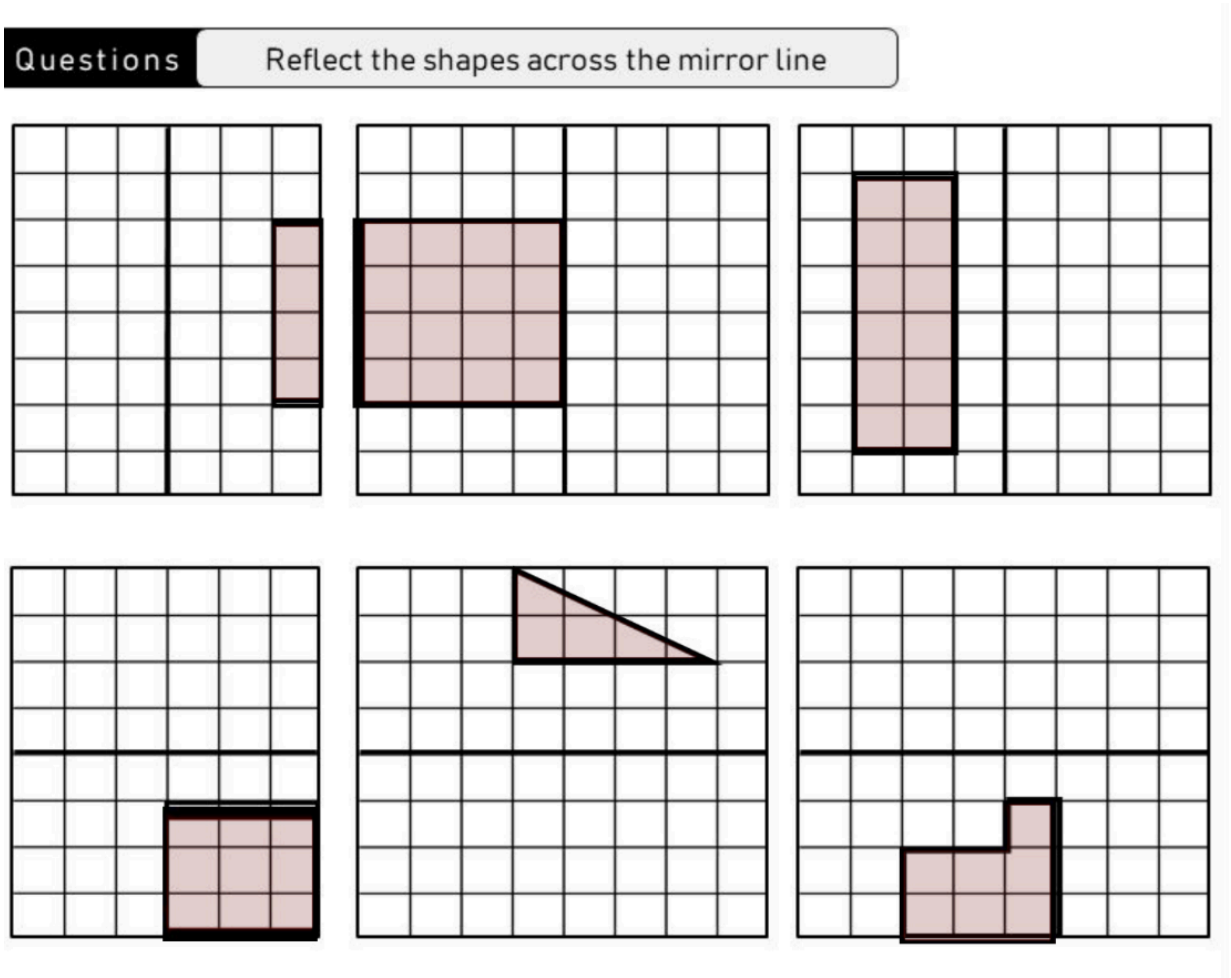


5) Left 3, down 6

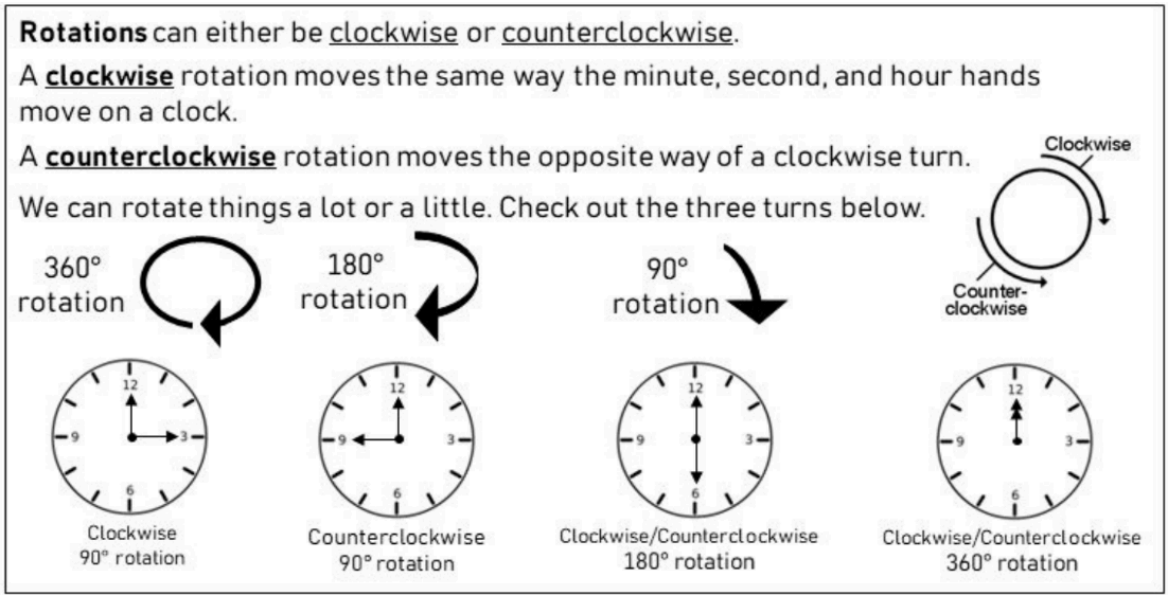


6) Left 2, up 4

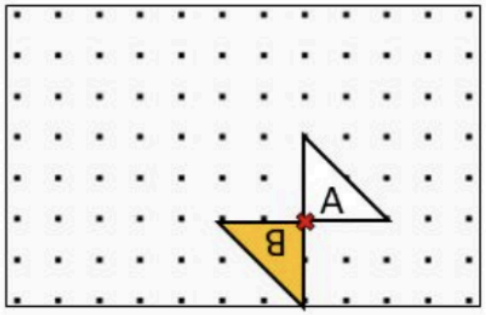
14. Reflecting shapes across the line of symmetry



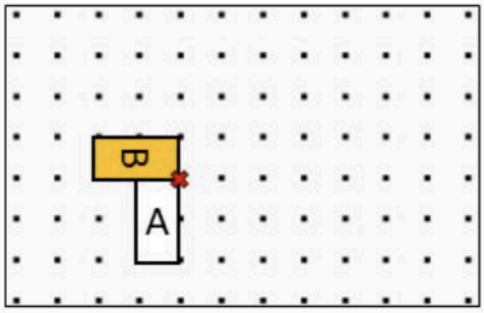
15. Describing rotations using clockwise or counterclockwise.



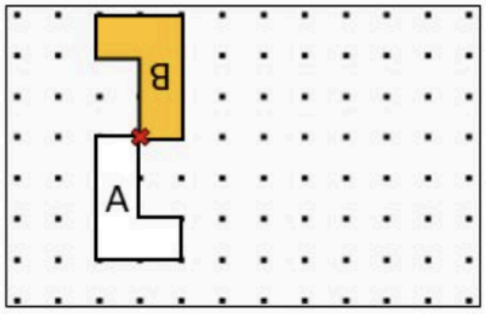
Questions Describe the rotations. Shape A is the original shape



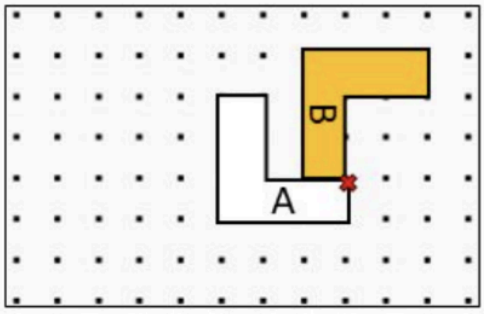
1) _____



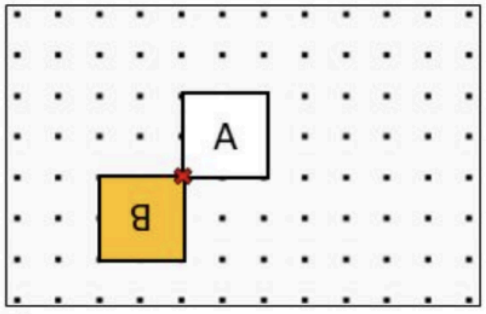
2) _____



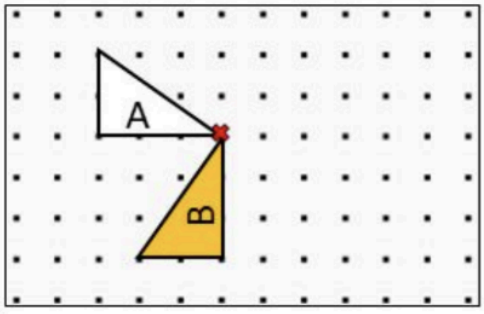
3) _____



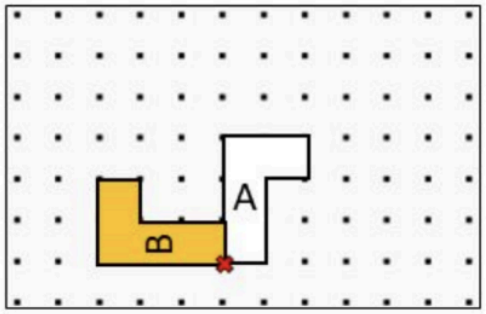
4) _____



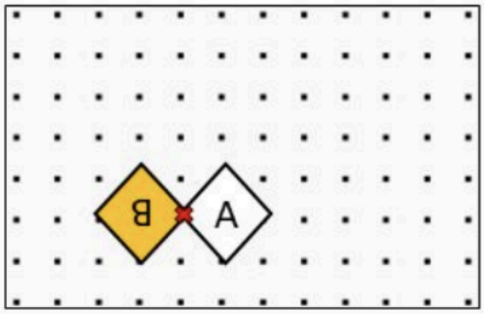
5) _____



6) _____



7) _____



8) _____

16. Rotating shapes around a marked point.

Your child may use a piece of parchment paper to support them with describing rotations if they would like