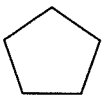
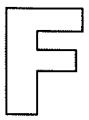
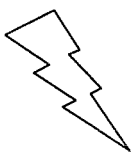
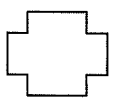
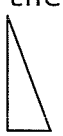
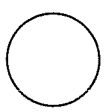
Enrichment Packet #28

Due: Monday

NAME: _____

Name _____ Date _____

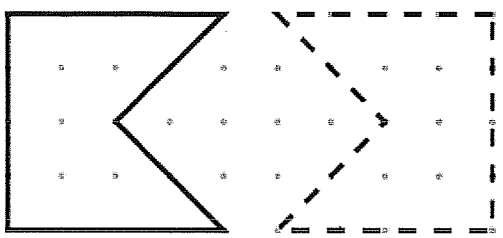
Independent Practice 2: Recognizing Lines of Symmetry

1. Does the figure have a line of symmetry?  Yes ___ No ___	2. 1) How many lines of symmetry does the figure have? ____  2) Draw them on the figure.
3. 1) How many lines of symmetry does a pentagon have? ____  2) Draw them on the pentagon.	4. Does the figure have a line of symmetry?  Yes ___ No ___
5. Does the figure have a line of symmetry?  Yes ___ No ___	6. 1) How many lines of symmetry does the figure have? ____  2) Draw them on the figure.
7. Does the figure have a line of symmetry?  Yes ___ No ___	8. 1) How many lines of symmetry does the figure have? ____  2) Draw them on the figure.
9. 1) How many lines of symmetry does the triangle have? ____  2) Draw them on the triangle.	10. Does the figure have a line of symmetry?  Yes ___ No ___
11. 1) How many lines of symmetry does the figure have? ____  2) Draw them on the figure.	12. Does the figure have a line of symmetry?  Yes ___ No ___

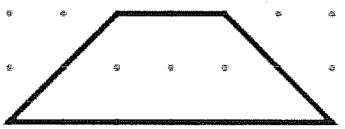
Name: _____

Reflection, Rotation, Transition

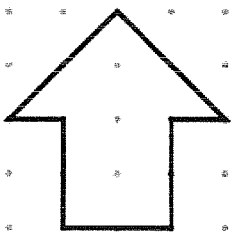
a. Draw the REFLECTION of the shape.



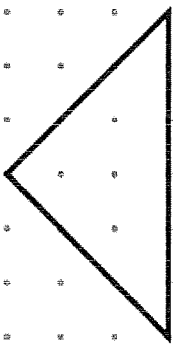
b. Draw the ROTATION of the shape.



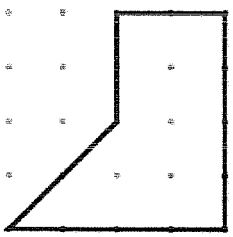
c. Draw the TRANSLATION of the shape.



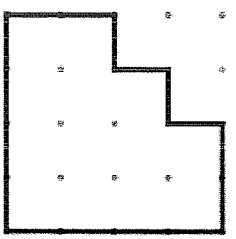
d. Draw the REFLECTION of the shape.



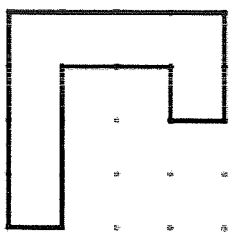
e. Draw the ROTATION of the shape.



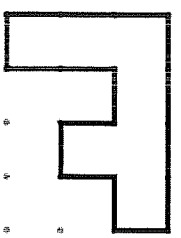
f. Draw the TRANSLATION of the shape.



g. Draw the ROTATION of the shape.



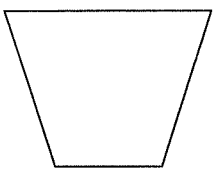
h. Draw the REFLECTION of the shape.

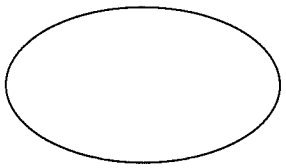


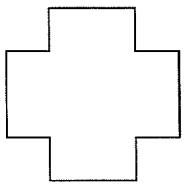
ROTATIONAL SYMMETRY

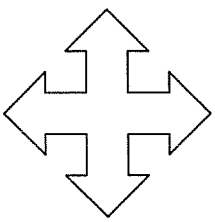
A shape has rotational symmetry if it fits onto itself two or more times in one turn.
The order of rotational symmetry is the number of times the shape fits onto itself in one turn.
A 2D shape has a line of symmetry if the line divides the shape into two halves – one being the mirror image of the other.

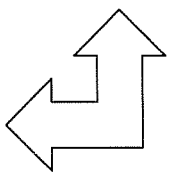
Write the order of rotational symmetry under each shape & letter. Also draw dotted lines to indicate lines of symmetry.

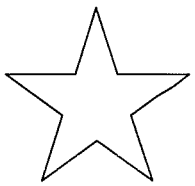


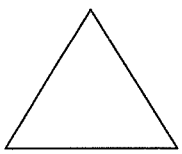


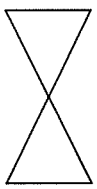


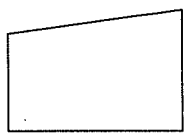


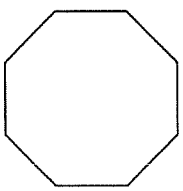


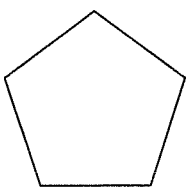


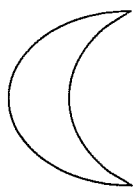










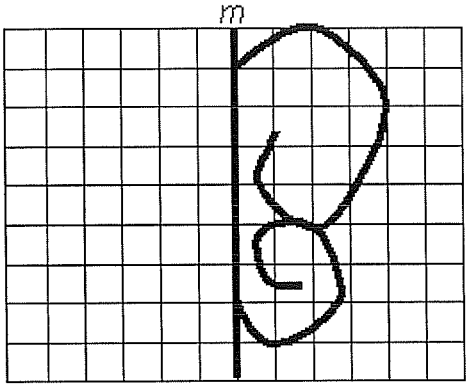


M A T H S

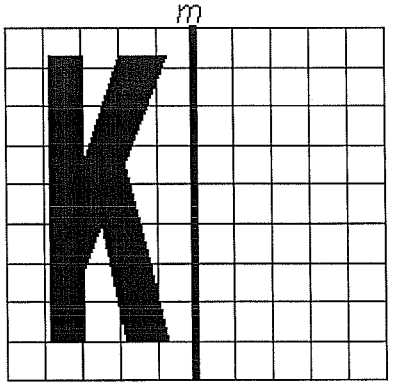
SYMMETRY

1. Complete the pictures below, by reflecting them in the mirror lines (m) given. Some pictures have more than one mirror line.

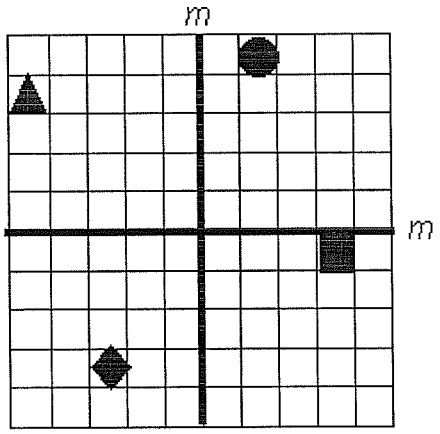
a)



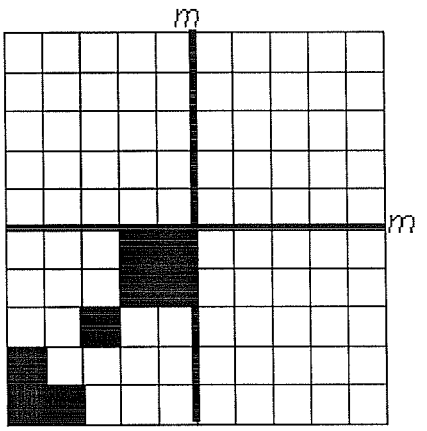
b)



c)



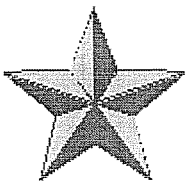
d)



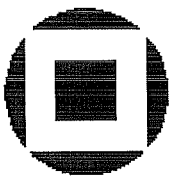
2. For the pictures below draw in the axes of symmetry (mirror line).

a)

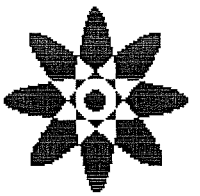
b)



c)



d)

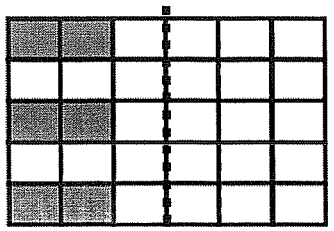


3. In the box below design a pattern to decorate the spine of a book. The pattern must have 2 axes of symmetry.

Name _____ Date _____

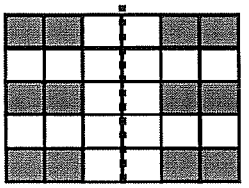
Introduction: Complete the Symmetry

Basic Skills

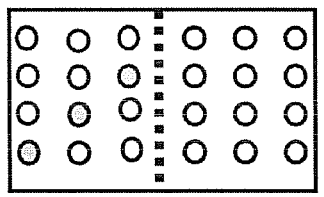


Complete the shape by coloring in the squares to give it symmetry across the dotted line.

Answer:

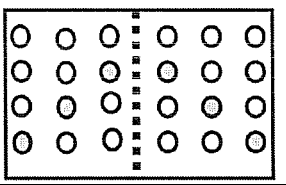


Basic Skills Practice



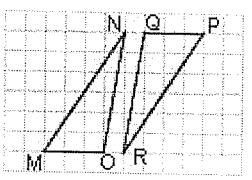
Complete the shape by coloring in the dots to give it symmetry across the dotted line.

Answer:



Congruent figures

Triangles MNO and PQR are congruent. Match each segment or angle below with its corresponding part in the list on the right by typing its letter in the box provided.

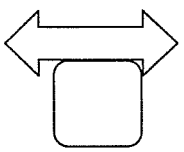


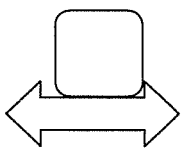
$\overline{MO} \cong$		a.	$\overline{PR}$
$\angle PQR \cong$		b.	$\angle MON$
$\angle MNO \cong$		c.	$\angle ONM$
$\overline{MN} \cong$		d.	$\overline{PQ}$
$\angle QRP \cong$		e.	$\overline{ON}$
$\overline{QR} \cong$		f.	$\angle PRQ$

Name _____ Date _____

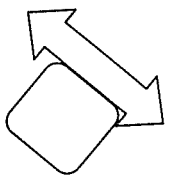
Quiz: Transformations
Label each figure with the correct term. **Translation** (slide) **Rotation** (turn) **Reflection** (flip).

1.

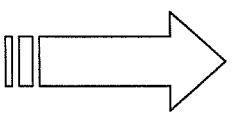


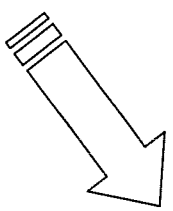


2.

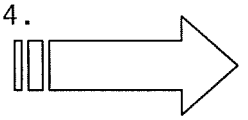


3.

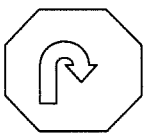


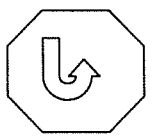


4.

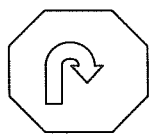


5.

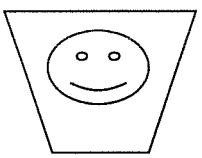


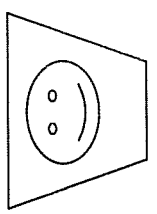


6.

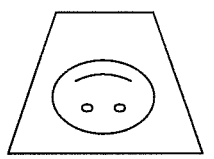


7.

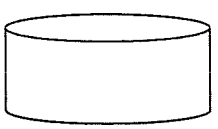


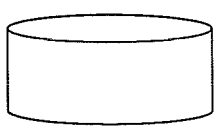


8.

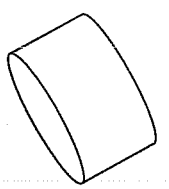


9.





10.



Circle # Correct	0	1	2	3	4	5	6	7	8	9	10
Percentage Score	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

Kuta Software - Infinite Geometry

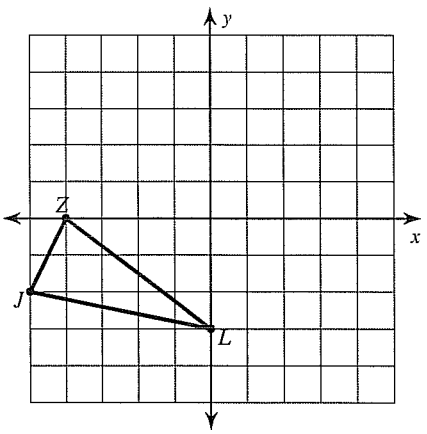
Name_____

All Transformations

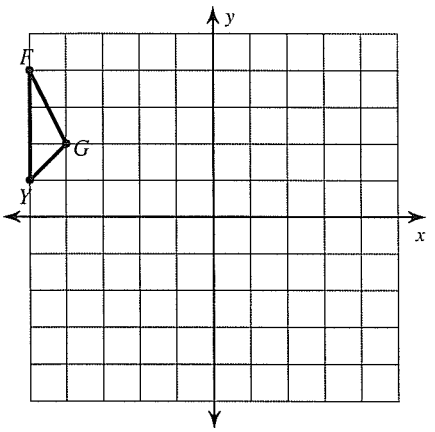
Date_____ Period____

Graph the image of the figure using the transformation given.

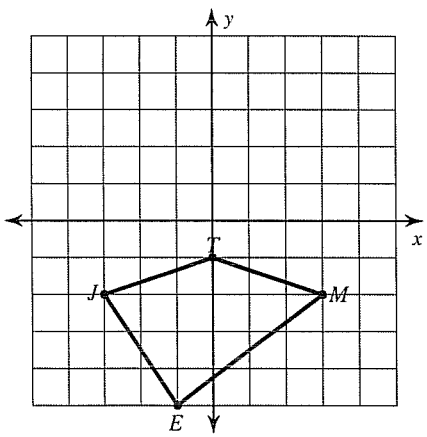
1) rotation 90° counterclockwise about the origin



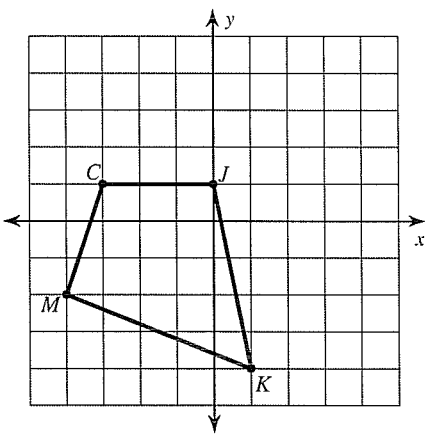
2) translation: 4 units right and 1 unit down



3) translation: 1 unit right and 1 unit up

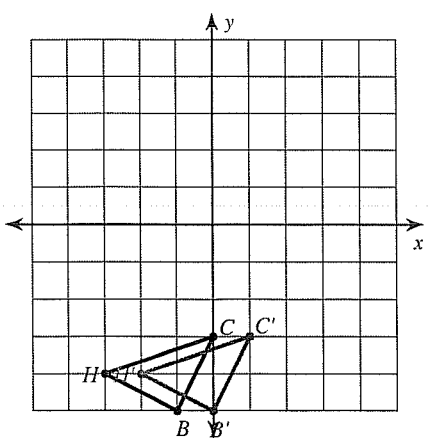


4) reflection across the x-axis

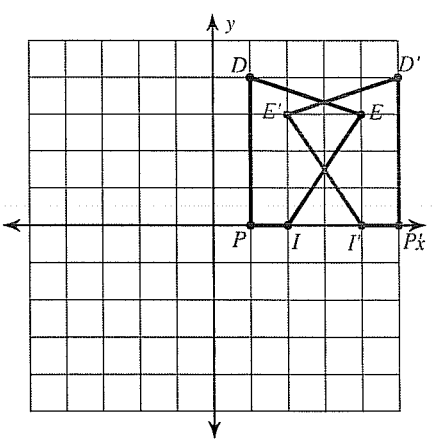


Write a rule to describe each transformation.

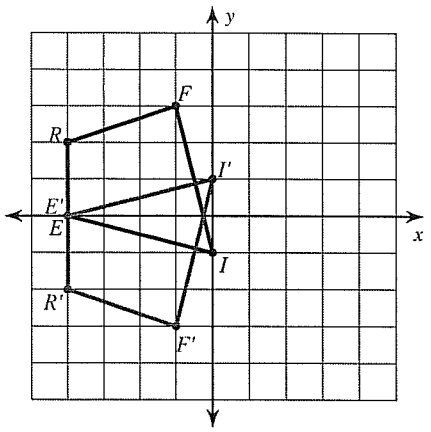
5)



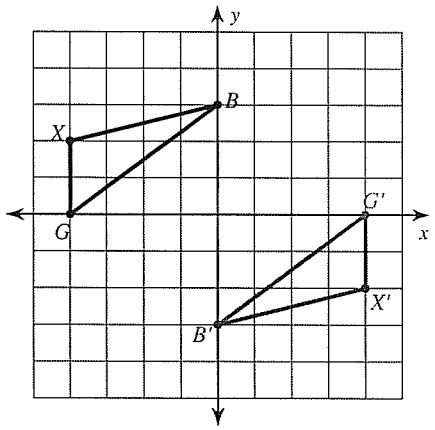
6)



7)

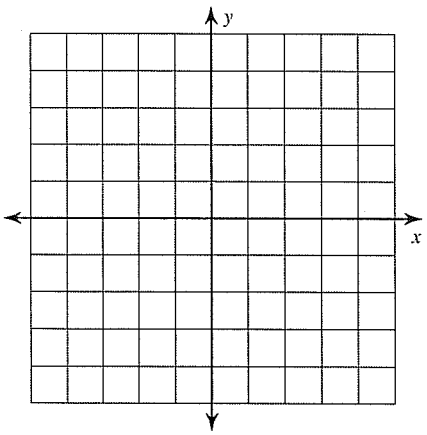


8)

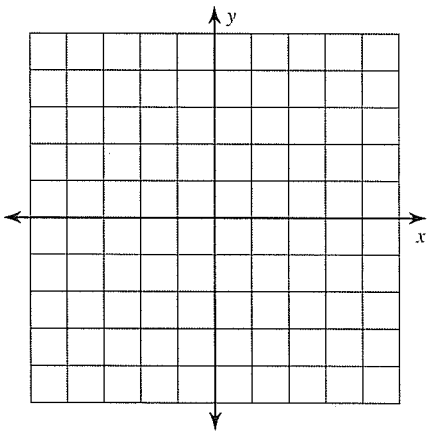


Graph the image of the figure using the transformation given.

9) rotation 90° clockwise about the origin
$B(-2, 0)$, $C(-4, 3)$, $Z(-3, 4)$, $X(-1, 4)$



10) reflection across $y = x$
$K(-5, -2)$, $A(-4, 1)$, $I(0, -1)$, $J(-2, -4)$



Find the coordinates of the vertices of each figure after the given transformation.

11) rotation 180° about the origin
$E(2, -2)$, $J(1, 2)$, $R(3, 3)$, $S(5, 2)$

12) reflection across $y = 2$
$J(1, 3)$, $U(0, 5)$, $R(1, 5)$, $C(3, 2)$

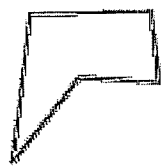
13) translation: 7 units right and 1 unit down
$J(-3, 1)$, $F(-2, 3)$, $N(-2, 0)$

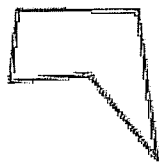
14) translation: 6 units right and 3 units down
$S(-3, 3)$, $C(-1, 4)$, $W(-2, -1)$

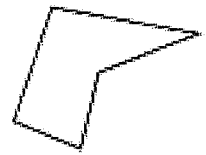
Transformation Practice Worksheet

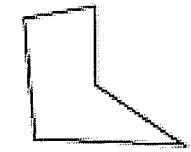
Label each figure with the correct transformational term. **Translation** (slide) **Rotation** (turn) **Reflection** (flip)

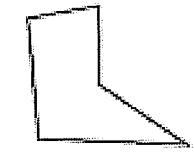
Polygon A
Start →



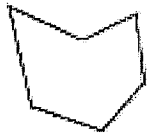


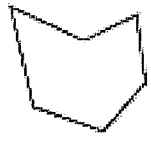


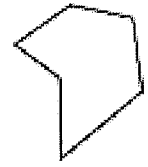


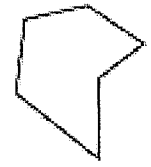


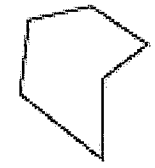
Polygon B
Start →



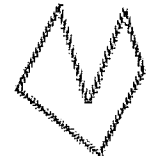




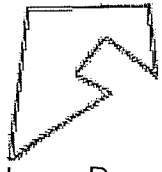


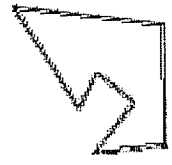


Polygon C
Start →



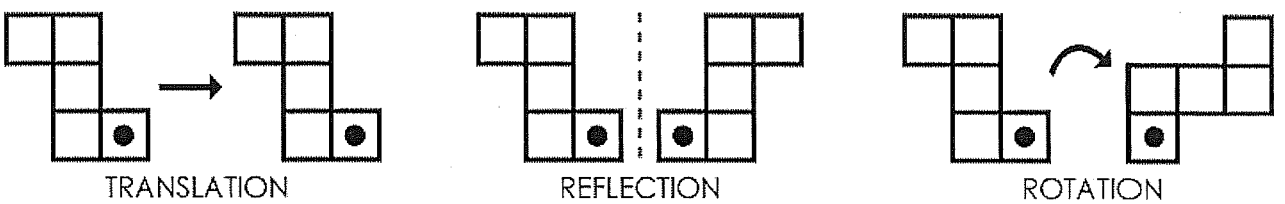
Polygon D
Start →





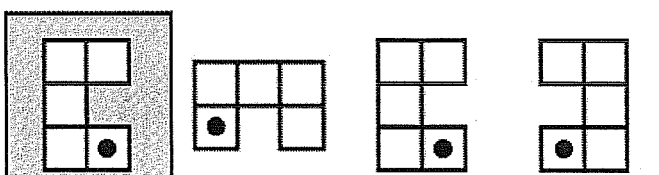
Name: _____

Translation, Rotation, and Reflection

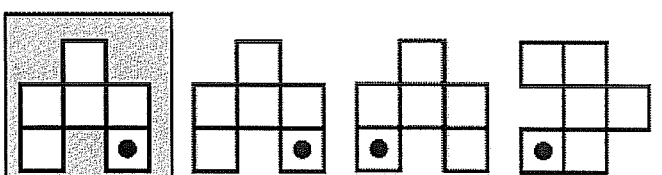


Label each shape as translation, reflection and rotation.

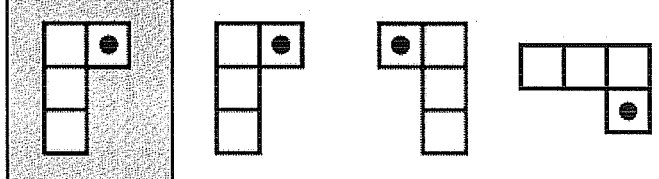
a.



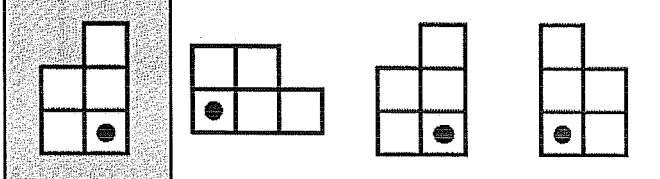
b.



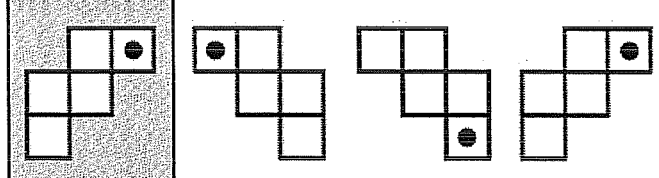
c.



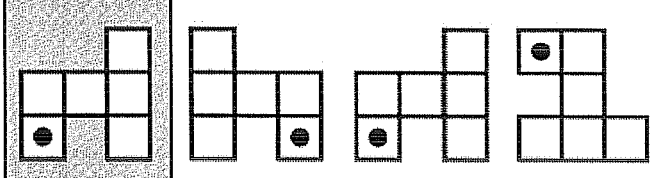
d.



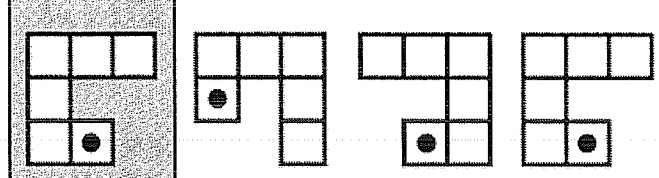
e.



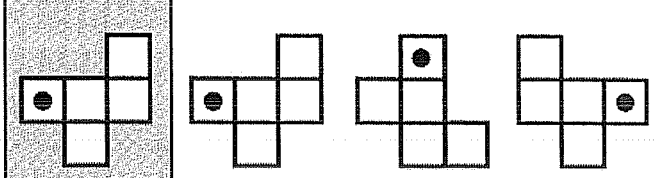
f.



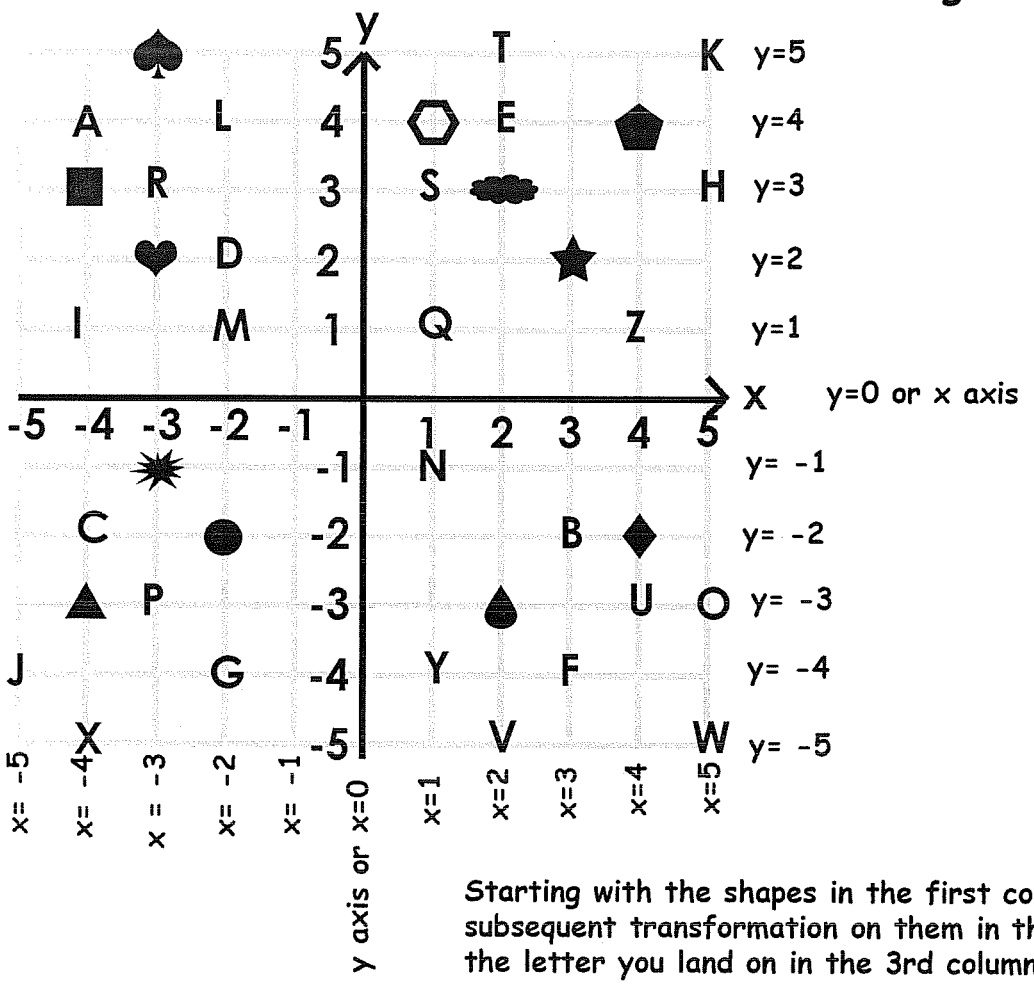
g.



h.



Transformations Code Breaking



Starting with the shapes in the first column, perform the subsequent transformation on them in the grid above. Write the letter you land on in the 3rd column.

	Translate 3 right and 2 down	
	Rotate 90° clockwise about (0,0)	
	Translate 1 up	
	Reflect in *y=4*	
	Reflect in *x axis*	
	Reflect in *y=x* *(the diagonal line going through (1,1), (2,2) etc)*	
	Reflect in *x axis*	
	Translate 3 right and 6 down	
	Translate 2 right	
	Reflect in *x= -3*	
	Translate 1 left and 5 up	
	Translate 1 right and 1 down	
	Reflect in *x=1*	
	Rotate 180° about (-3,1)	
	Rotate 90° anticlockwise about (-2, -3)	
	Translate 1 left and 2 up	
	Rotate 180° about (-1, -1)	
	Rotate 180° about (1,0)	
	Translate 2 left and 3 up	
	Translate 2 left and 7 up	

	Translate 3 right	
	Reflect in *y axis*	
	Translate 1 right	
	Reflect in *y=0.5*	
	Reflect in *x axis*	
	Rotate 90° clockwise about (1,0)	
	Rotate 90° anticlockwise about (0,0)	
	Translate 1 right and 1 up	
	Translate 1 down	
	Reflect in *y= -2*	
	Rotate 90° clockwise about (4,3)	
	Reflect in *y= -1*	
	Translate 1 down	
	Translate 4 right and 1 up	
	Rotate 180° about (-3, 3.5)	
	Reflect in the line *y=3.5*	
	Reflect in the line *x=1.5*	
	Reflect in the line *y= -4*	
	Rotate 90° anticlockwise about (0, 0)	