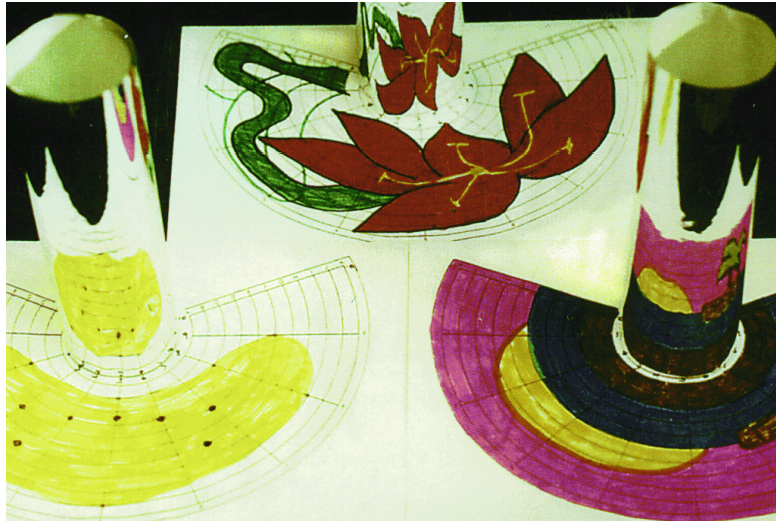


Name _____ Hour _____

The Secret of Anamorphic Art

It is 1655 and you are living in England, a supporter of the deposed family. a political persuasion might mean your life it were know authorities. you carry portrait the executed king, Charles I, with you at all times. everyone knows what Charles I like, you confide t you not be Why not? simple--since this was done an anamorphic-art style, cannot be by anyone who does not know the secret of anamorphic art.



Anamorphic art refers to artwork that is indistinct when viewed from a normal perspective but recognizable when the image is viewed from a different perspective or reflection. The term *anamorphic* is derived from two words meaning *change again*. Leonardo da Vinci was an early practitioner of anamorphic art. He produced sketches that distorted

The activity that uses the technique of mirrored images is called anamorphic art. It is thought to have originated in China about 1000 years ago. The earliest known examples of anamorphic art using mirrored cylinders were created by three Chinese artists that date back to about 1575. In 1630, the secret to creating anamorphic drawings was revealed in a book titled *Perspective et Conique* by Jean Vaulezard (1976). Within a century, examples of anamorphic art became the rage, with many artists flooding the market with their work throughout Europe. For the next 200 years, anamorphic art became a popular form of entertainment, as well as a way of life. The invention of photography changed all that. By 1860, the public's fascination with anamorphic art had faded out; instead, they focused on the photograph as a better way of reflecting the world around them.

Two main techniques are available for creating anamorphic art. The Chinese artists apparently drew their pictures by concentrating on the vertical axis. European artists used the grid system presented in this activity. Enjoy!

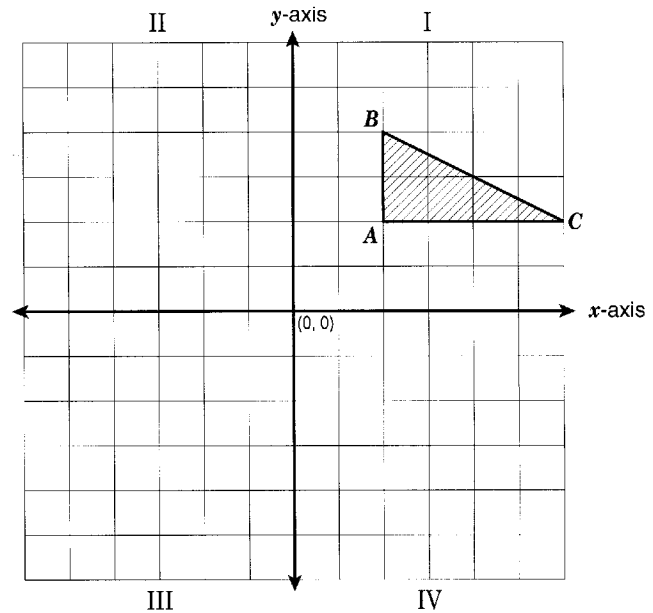
The Secret of Anamorphic Art

1. What are the coordinates of the vertices of triangle ABC ? _____

2. Reflect triangle ABC over the x -axis to form image triangle $A'B'C'$. What are the coordinates of the vertices of image triangle $A'B'C'$? _____

3. What relationship do you see between the coordinates of the vertices of ABC and the coordinates of the vertices of triangle $A'B'C'$? _____

4. Test your relationship from question 3. Use triangle QRS , with coordinates $Q(1, 3)$, $R(6, 3)$, and $S(5, 5)$, and reflect triangle QRS over the x -axis.



5. Reflect triangle ABC over the y -axis to form image triangle $A''B''C''$. What are the coordinates of the vertices of the image triangle $A''B''C''$? _____

6. What relationship do you see between the coordinates of the vertices of triangle ABC and the coordinates of the vertices of the image triangle $A''B''C''$? _____

7. Test your relationship from question 6. Use triangle QRS , with coordinates $Q(1, 3)$, $R(6, 3)$, and $S(5, 5)$, and reflect the triangle over the y -axis. _____

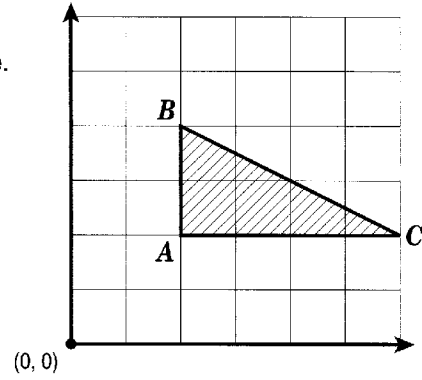
8. Reflect image triangle $A'B'C'$ over the y -axis, and reflect image triangle $A''B''C''$ over the x -axis. What do you notice? _____

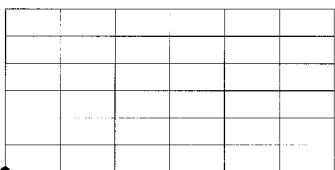
9. Make a conjecture based on your findings in question 8. Check your conjecture with the image triangle of triangle QRS . _____

Graph triangle *ABC* onto each of the following distorted grids. On the lines beneath each grid, describe the distorted triangle.

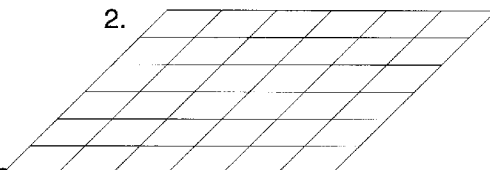
Before you begin, predict which grid will produce the most distorted triangle.

If triangle *ABC* were translated to a different position on the original grid, it would still have the same shape. Would the resulting image triangle in each of these grids still have the same shape as the first image triangle you graphed?

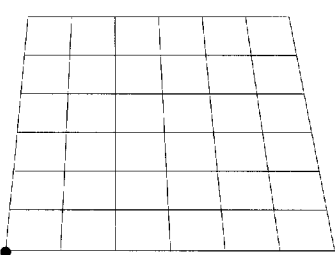


1. 

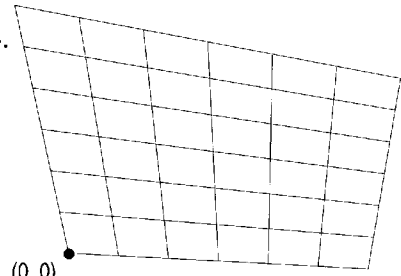
(0,0)

2. 

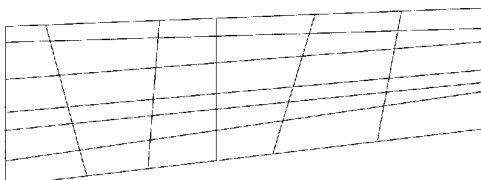
(0,0)

3. 

(0,0)

4. 

(0,0)

5. 

(0,0)

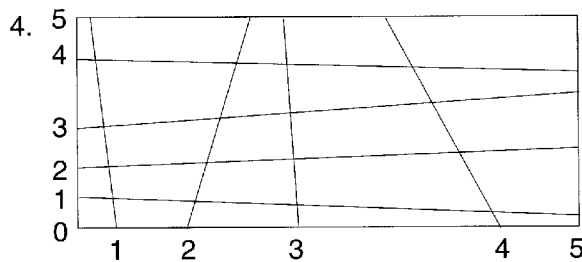
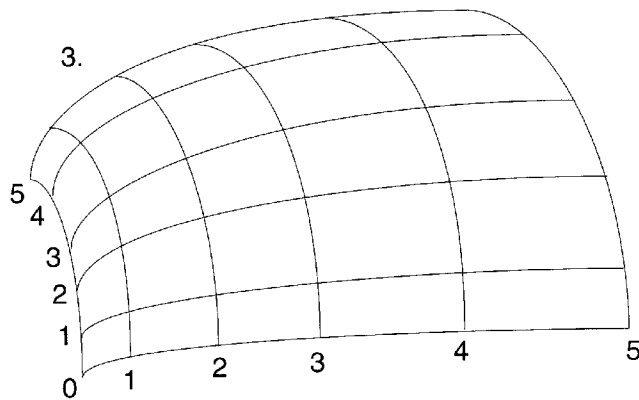
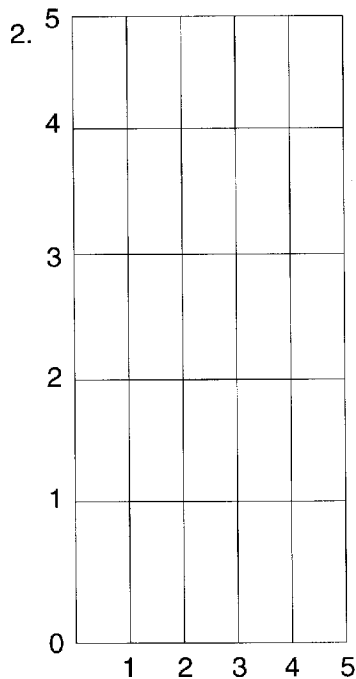
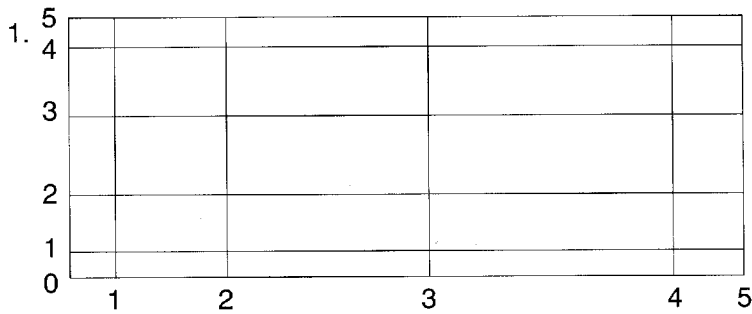
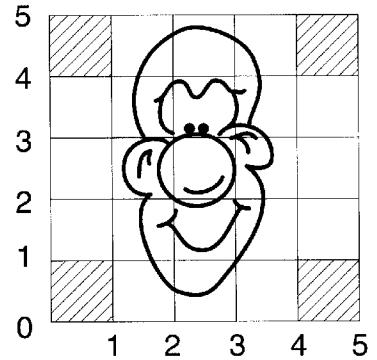
The Secret of Anamorphic Art

GRAPHING CURVED FIGURES ON DISTORTED GRIDS

SHEET 3

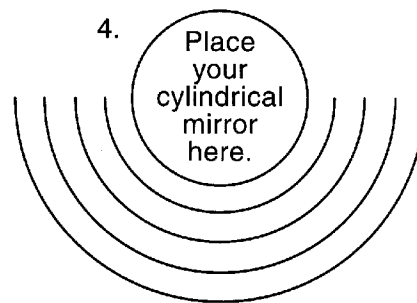
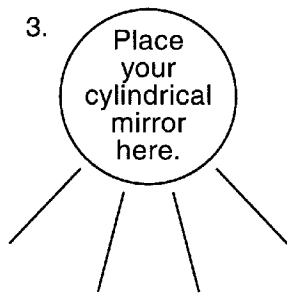
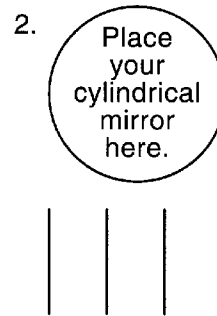
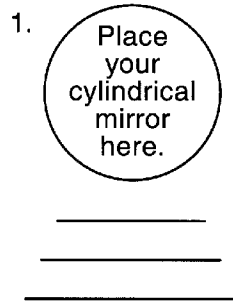
You are challenged with graphing a figure that is made of segments and curves. Reproduce the cartoon face on each distorted grid. Be sure that your cartoon lines cross the grid lines at the same place as in the original grid.

Before you begin, predict which graph will produce the most distorted face.

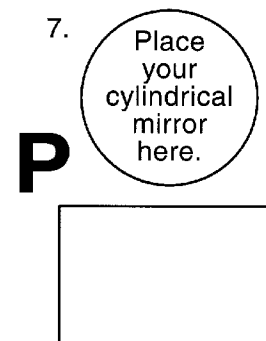
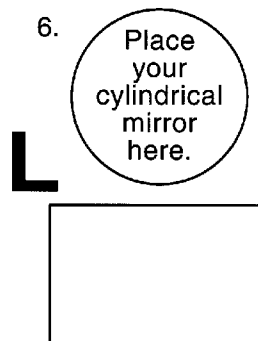
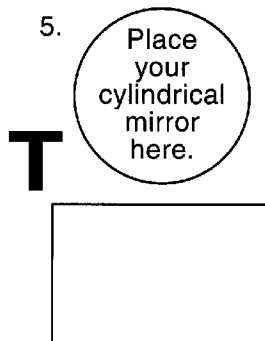


The Secret of Anamorphic Art

For each of the following, predict what the reflections of the sets of segments or arcs will look like. Draw your prediction.



Use what you learned about the reflection of lines to sketch the letters in the boxes so that their reflection in the cylindrical mirror appears with no distortion. Use a pencil so that you can make changes in your sketches.



Draw an original sketch in the square grid. Translate your sketch onto the circular grid to form a distorted image. Reflect your distorted image onto a mirrored cylinder to produce a normal image. You may cut along the bold horizontal line to remove the rectangular grid before you display your anamorphic art.

