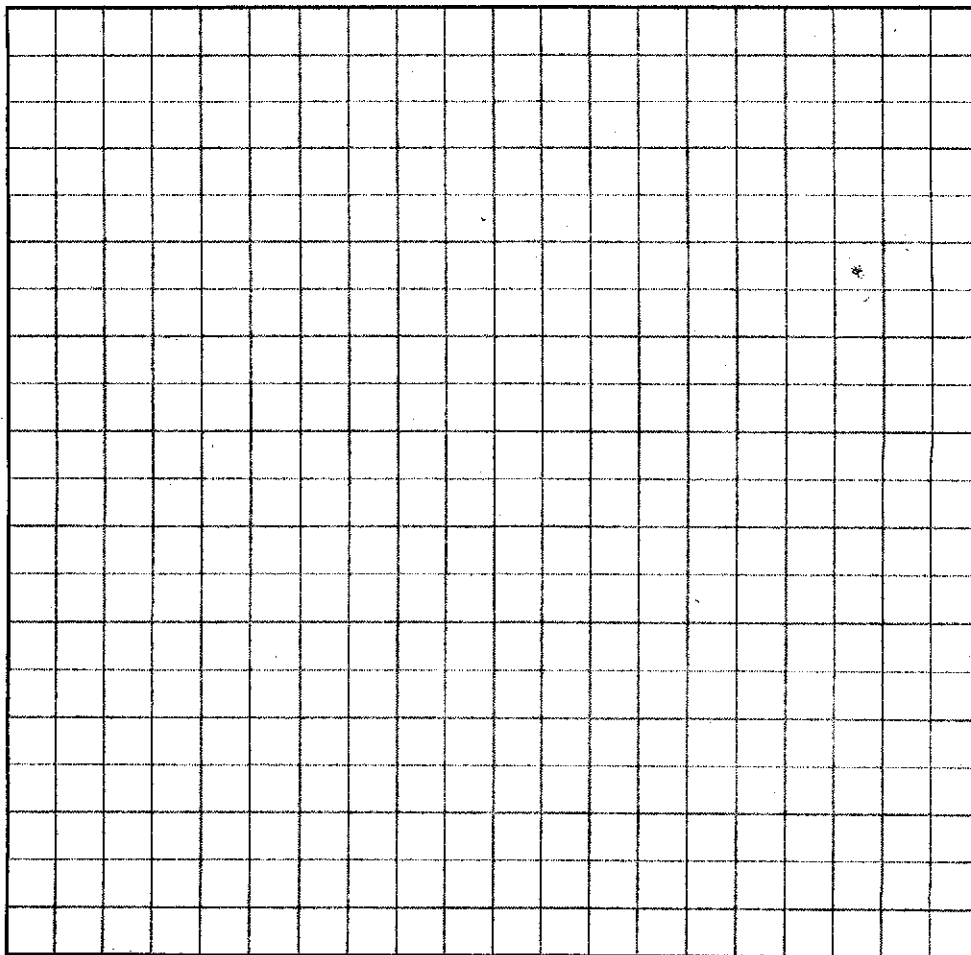


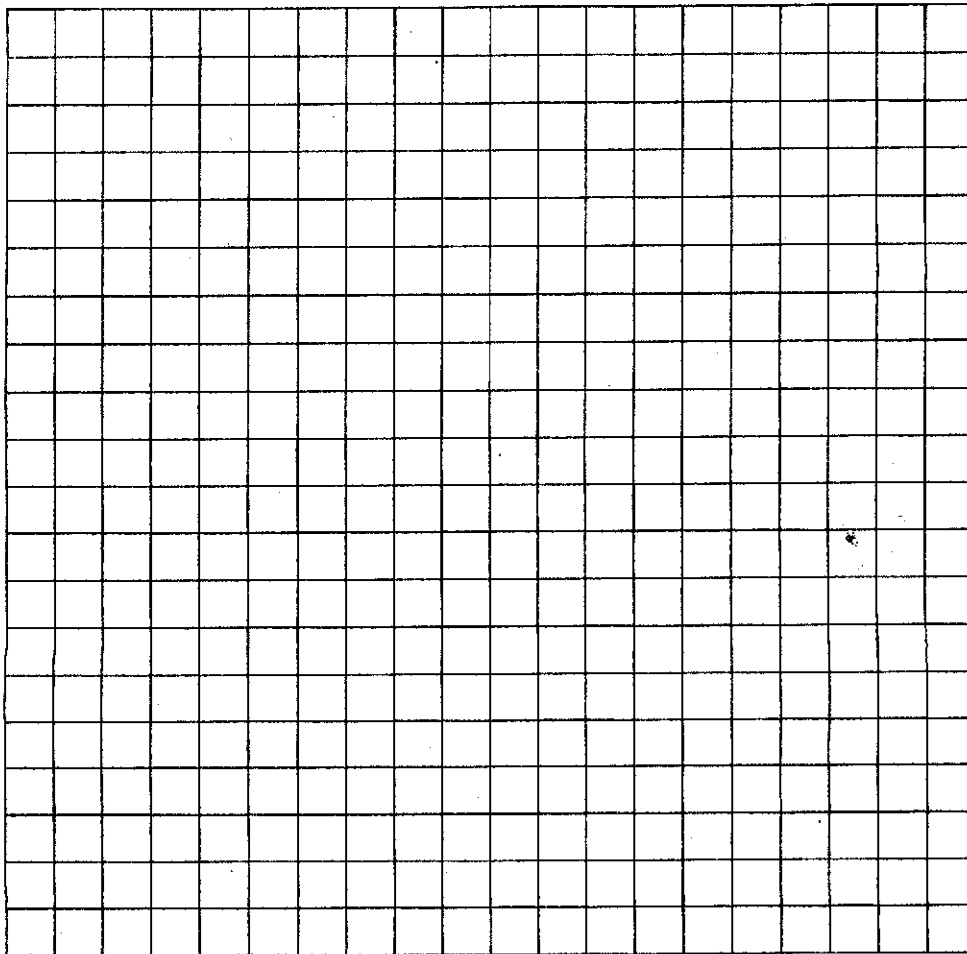
Part III

Answer all questions in this part. Each correct answer will receive 4 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. [24]

27 On the accompanying grid, graph and label \overline{AB} , where A is $(0,5)$ and B is $(2,0)$. Under the transformation $r_{x\text{-axis}} \circ r_{y\text{-axis}}$ (\overline{AB}), A maps to A'' , and B maps to B'' . Graph and label $\overline{A''B''}$. What single transformation would map \overline{AB} to $\overline{A''B''}$?



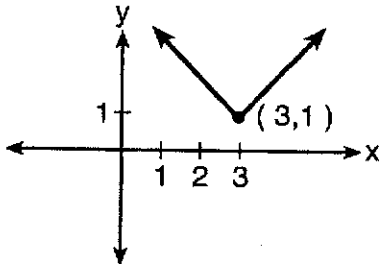
- 32 a On the accompanying grid, graph the equation $2y = 2x^2 - 4$ in the interval $-3 \leq x \leq 3$ and label it a .
- b On the same grid, sketch the image of a under $T_{5,-2} \circ r_{x\text{-axis}}$ and label it b .



13 What is the image of point $(1,1)$ under $r_{x\text{-axis}} \circ R_{0,90^\circ}$?

- (1) $(1,1)$ (3) $(-1,1)$
 (2) $(1,-1)$ (4) $(-1,-1)$

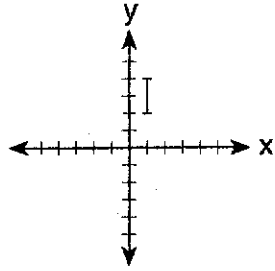
14 Which equation is represented by the accompanying graph?



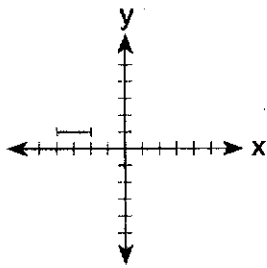
- (1) $y = |x| - 3$ (3) $y = |x + 3| - 1$
 (2) $y = (x - 3)^2 + 1$ (4) $y = |x - 3| + 1$

19 The accompanying graph represents the figure Γ .

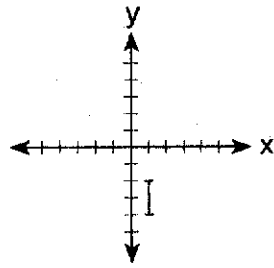
Use this space for computations.



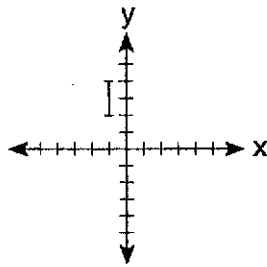
Which graph represents Γ after a transformation defined by $r_{y=x} \circ R_{90^\circ}$?



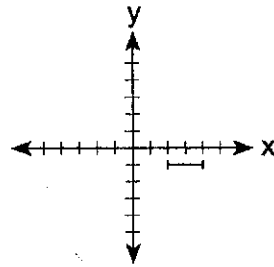
(1)



(3)

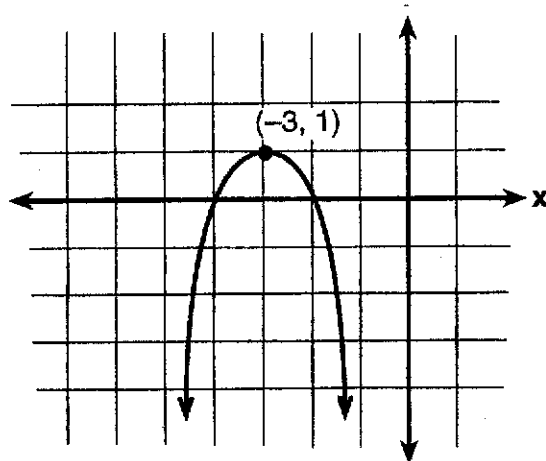


(2)



(4)

3 Which equation represents the parabola shown in the accompanying graph?



(1) $f(x) = (x + 1)^2 - 3$

(2) $f(x) = -(x - 3)^2 + 1$

(3) $f(x) = -(x + 3)^2 + 1$

(4) $f(x) = -(x - 3)^2 - 3$

[OVER]

31 Graph and label the following equations, a and b , on the accompanying set of coordinate axes.

$$a: y = x^2$$

$$b: y = -(x - 4)^2 + 3$$

Describe the composition of transformations performed on a to get b .

