

Name: \_\_\_\_\_ Date: \_\_\_\_\_

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[10] **A:** Clearly state whether the given statement is true or false. If the statement is false, correct it so it is true.

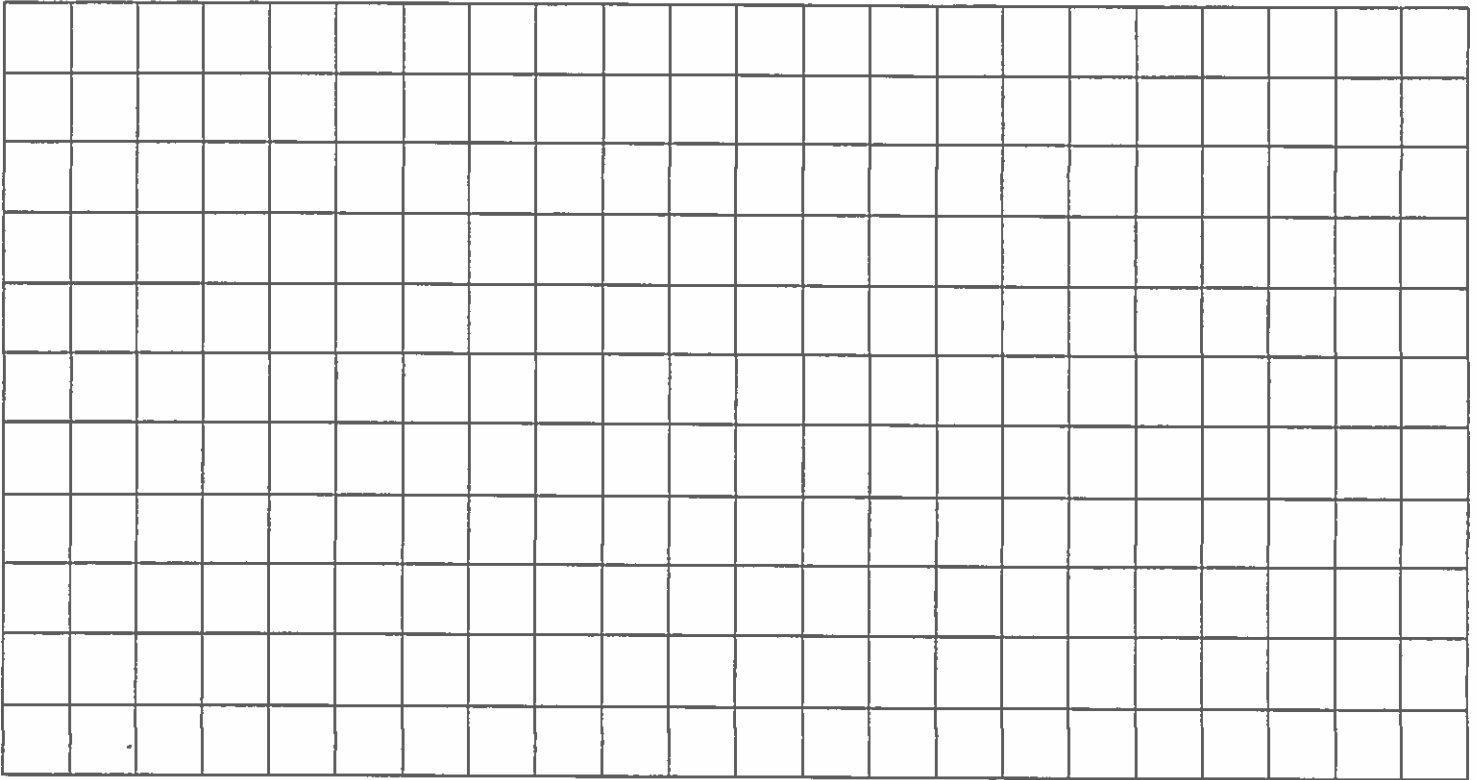
	A quadratic function is an example of a polynomial function.
	Some quadratic functions do not have a y-intercept.
	Every quadratic function has either a maximum or a minimum.
	Every quadratic function has at most 2 x-intercepts.
	An equation of a parabola cannot contain fractions or decimals.
	The equation of parabola's axis of symmetry can be determined from parabola's vertical translation.
	Horizontal translation changes the value of x-coordinates.
	Point (-4, 16) is on the graph of $y=x^2$ (the original parabola).
	A vertical compression of a parabola will result in a graph that is wider than the original graph of $y=x^2$ .
	All quadratic functions have the same range.

[12] **B:** Fill in the blanks so the statements are true.

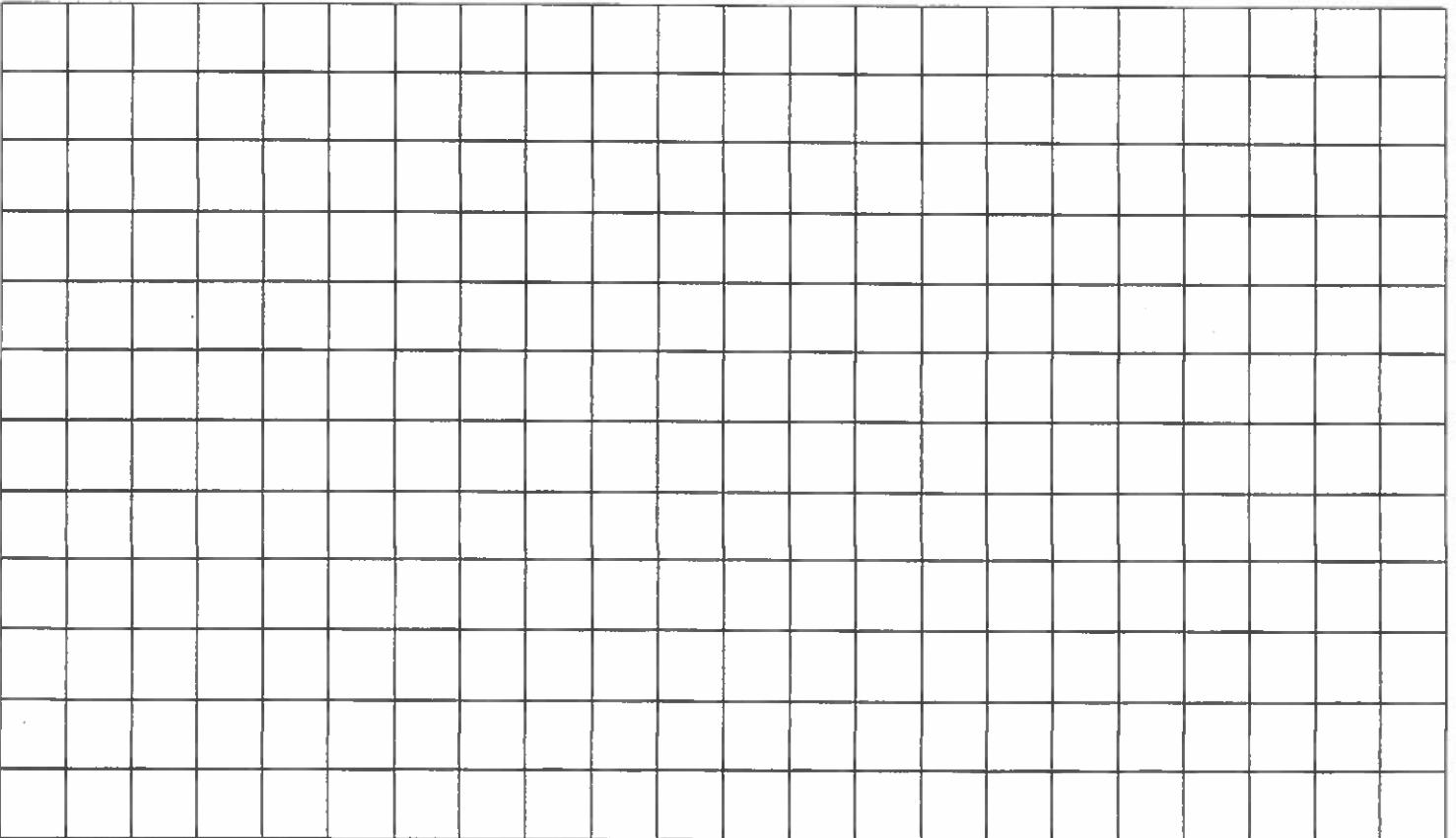
- If a parabola has a vertex in the origin then \_\_\_\_\_ and \_\_\_\_\_ could not have taken place.
- Unlike a parabola that was reflected in the x-axis, a parabola that was not reflected in the x-axis has to have \_\_\_\_\_.
- To change a quadratic equation in standard form to a vertex form one has to \_\_\_\_\_.
- Reflection in the x-axis changes \_\_\_\_\_ - coordinate of all points on the graph except the points that are \_\_\_\_\_ if such points exist.
- The maximum or the minimum value of a parabola always coincides with \_\_\_\_\_.
- The range of a parabola changes with \_\_\_\_\_.
- A graph that appears narrower than the graph of the original parabola is the result of \_\_\_\_\_ by \_\_\_\_\_ than \_\_\_\_\_.

[9] C: Graph the following:

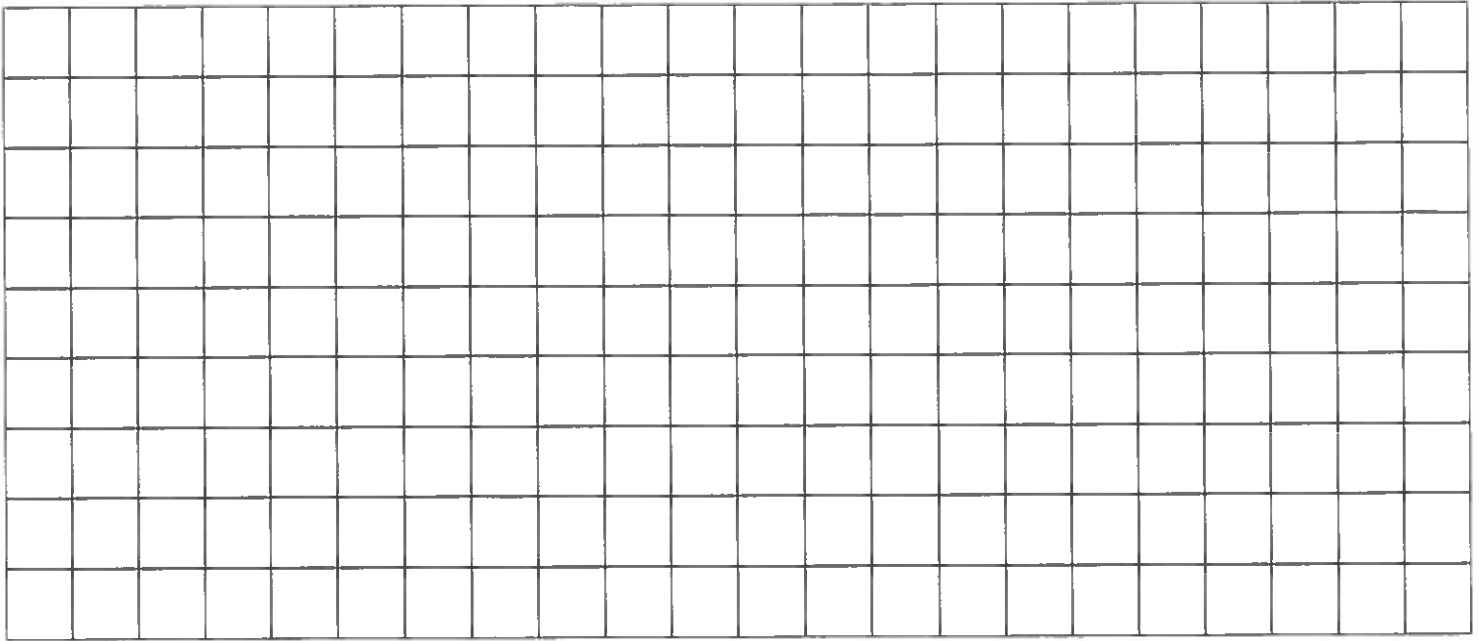
1. A parabola that was reflected in the x-axis, translated 5 units left and 2 units up.



2. A parabola given by  $y = -\frac{1}{2}(x - 3)^2 + 4$

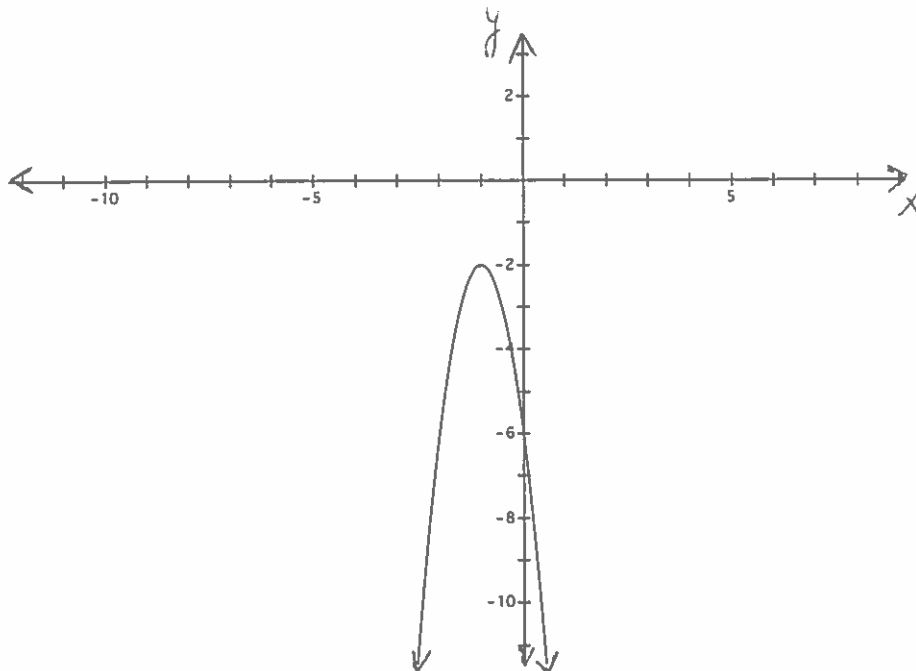


3. A parabola given by  $y = 3(x + 1)^2 + 2$ .



[8] D: Describe the given graph. State the following:

Vertex	Range	Direction of opening	Domain	x-intercept(s)	y-intercept	Equation of the axis of symmetry	Maximum or minimum value



**[5] E: Solve.**

A rectangular field is to be enclosed by a fence to create a safe pasture for ostriches. What is the maximum area of the pasture if 600 m of fencing is available?



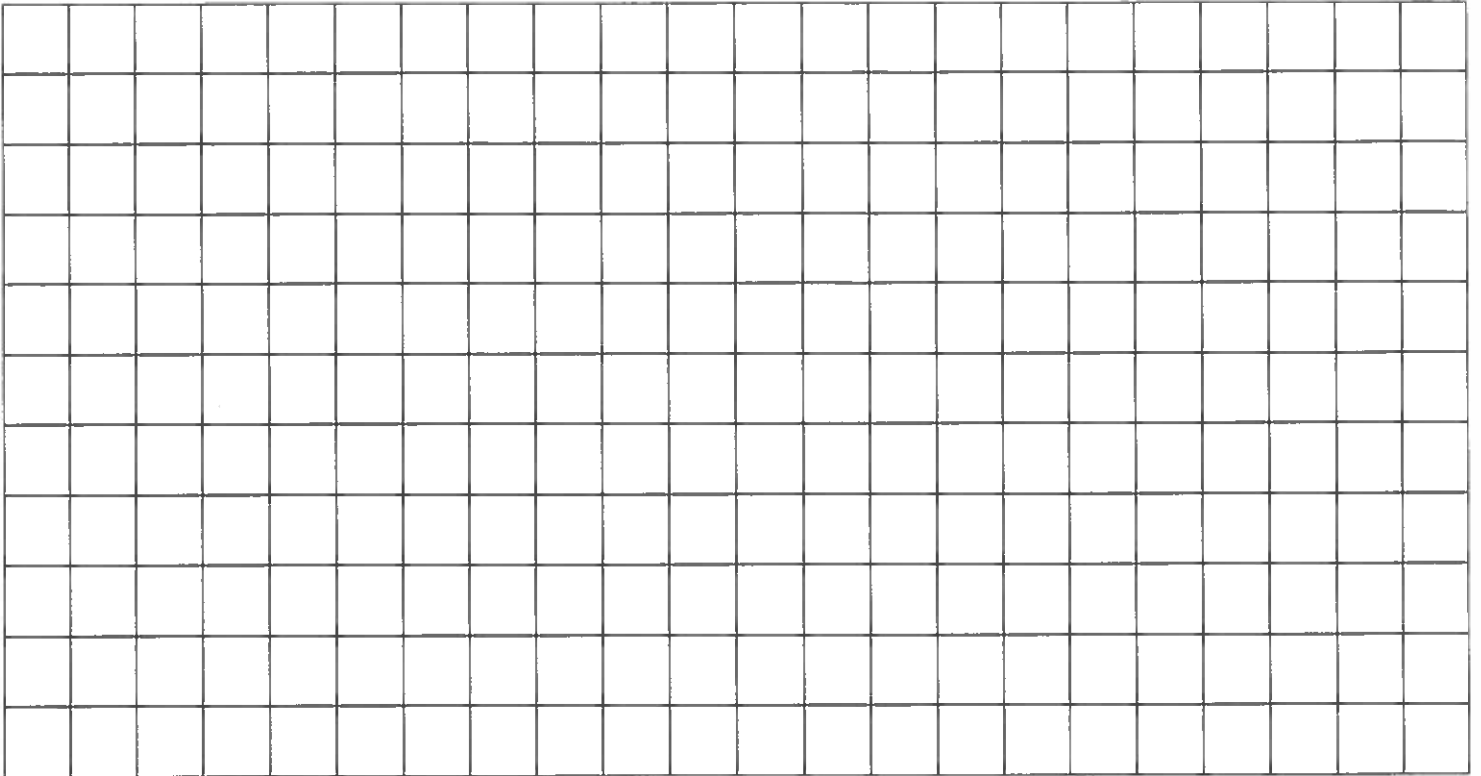
B) What shape of a pasture would ensure the greatest possible area for the smallest possible amount of fencing?

**[2] F: Change the given equation into vertex form.**

$$y = 7x^2 - 28x + 63$$

[9] C: Graph the following:

1. A parabola that was reflected in the x-axis, translated 5 units left and 2 units up.



2. A parabola given by  $(x, y) \rightarrow (x + 3, \frac{-1}{2}y + 4)$

