

Name:

Answers!

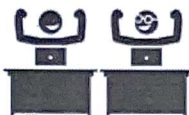
Class:



Communication



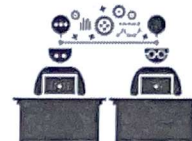
Successful Partnership



Encouragement



Solving Problem Together



Collaboration

For each of the below, sketch a graph of the quadratic function.

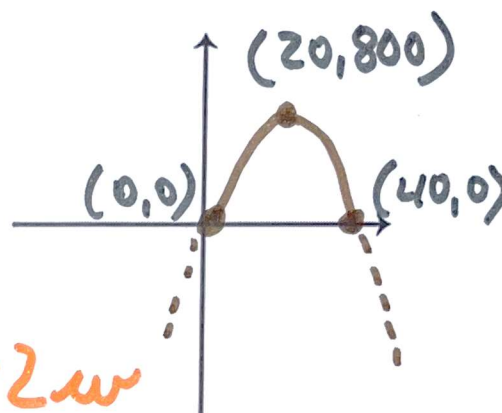
Question 01

You are building a 3-sided fence against a barn.

The fence is rectangular. You have 80 meters of fencing.

Write an equation relating the one length, l , and the two widths, w , of the fence.

$$w + w + l = 80 \text{ or } l = 80 - 2w$$



Write a quadratic equation relating the area of the fence, A , and the width, w , of the fence.

$$\text{Area} = l \cdot w$$

$$\text{Area} = (80 - 2w)w$$

$$\text{Area} = -2(-40 + w)w$$

Factored Form:

$$-2(w - 40)(w + 0)$$

Sketch the one length and two widths of the fence with the greatest area possible.

Root 1: $(40, 0)$

Root 2: $(0, 0)$

Line of Symmetry: $x = 20$

Vertex: $(20, -)$

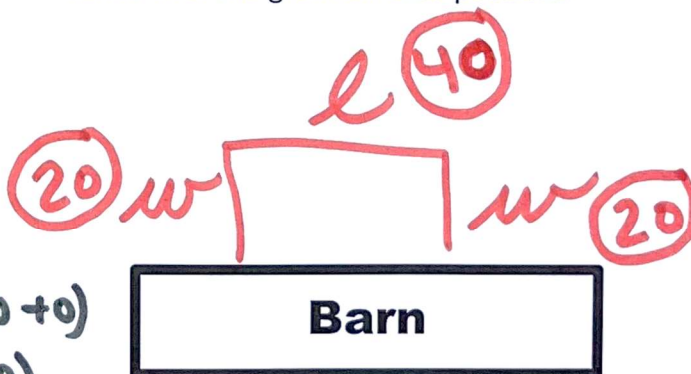
y-intercept:

$(0, 0)$

$$-2(20 - 40)(20 + 0)$$

$$-2(-20)(20)$$

$$800 \rightarrow (20, 800)$$

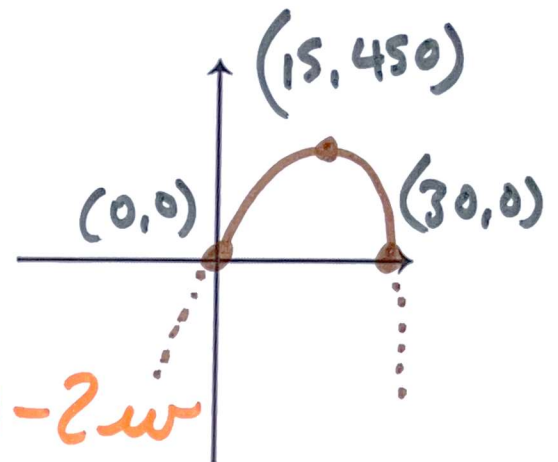


Question 02

You are building a 3-sided fence against a barn.

The fence is rectangular. You have **60 meters** of fencing.

Write an equation relating the one length, l , and the two widths, w , of the fence.



$$w + w + l = 60 \text{ or } l = 60 - 2w$$

Write a quadratic equation relating the area of the fence, A , and the width, w , of the fence.

$$\begin{aligned} \text{Area} &= lw \\ \text{Area} &= (60 - 2w)w \\ \text{Area} &= -2(-30 + w)w \end{aligned}$$

Factored Form: $-2(w - 30)(w + 0)$

Root 1: $(30, 0)$

Root 2: $(0, 0)$

Line of Symmetry: $x = 15$

Vertex: $(15, -)$

y-intercept:

$$\begin{aligned} (0, 0) \quad & -2(15 - 30)(15 + 0) \\ & -2(-15)(15) \end{aligned}$$

450

$(15, 450)$

Sketch the one length and two widths of the fence with the greatest area possible.

