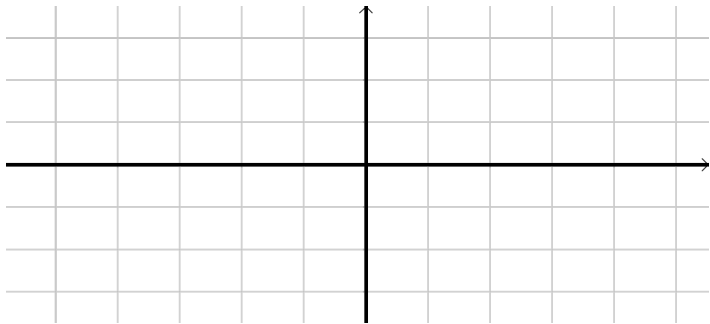# Graphing Quadratic Equations with 2 variable - Example 3

Example: Sketch the graph of:

$$y = f(x) = x^2 + 4x + 5$$

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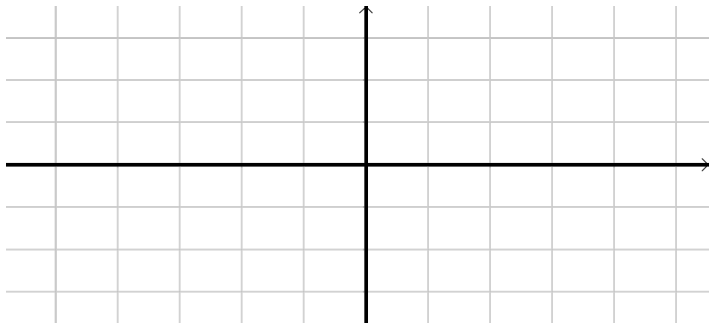
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To graph a quadratic, we need to find the important points:

$y-$int $x-$int

$x = 0$

vertex

Graphing Quadratic Equations with 2 variable - Example 3

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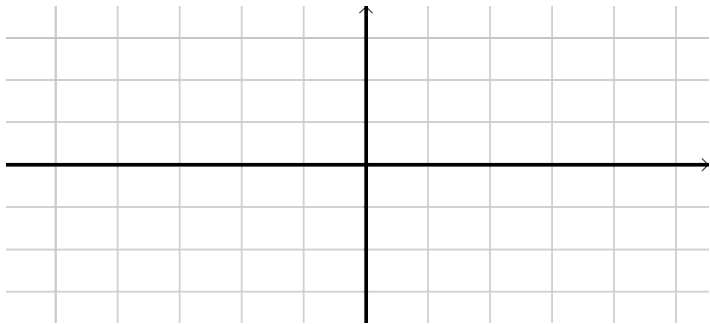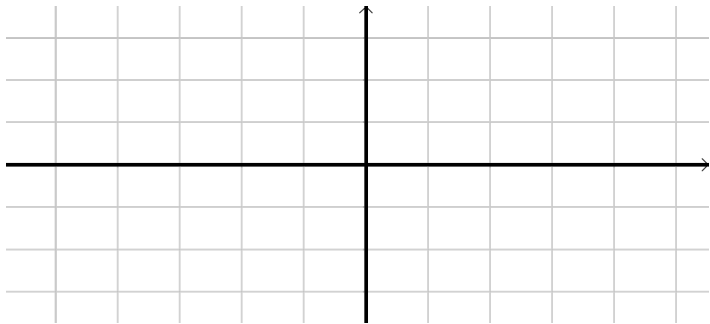To graph a quadratic, we need to find the important points:

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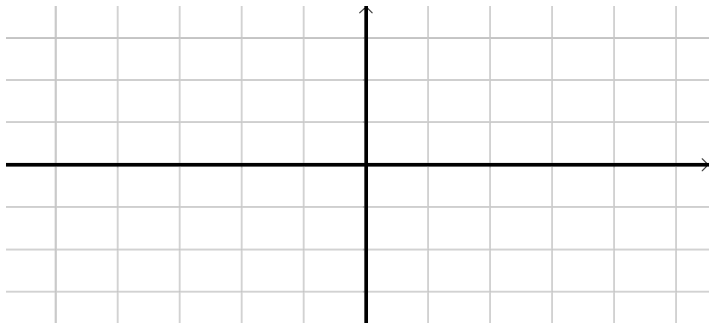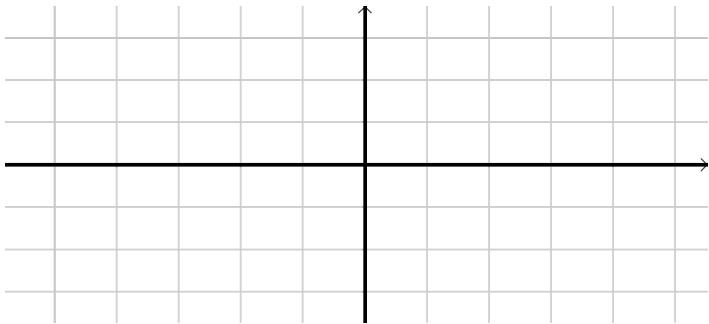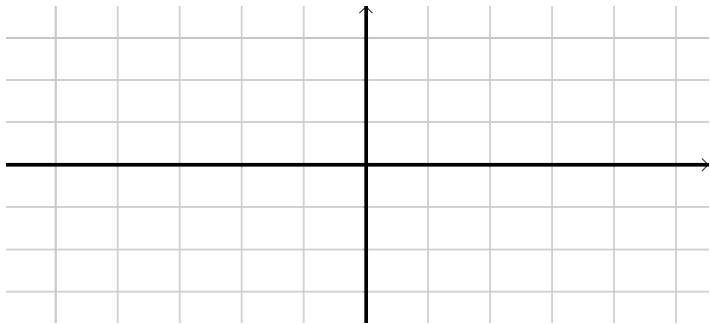To graph a quadratic, we need to find the important points:

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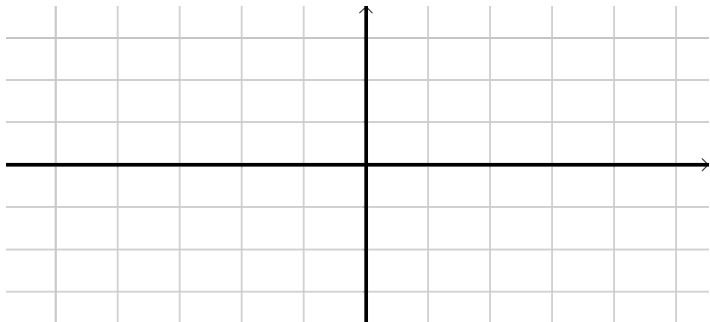$y-$int: $(0, 5)$

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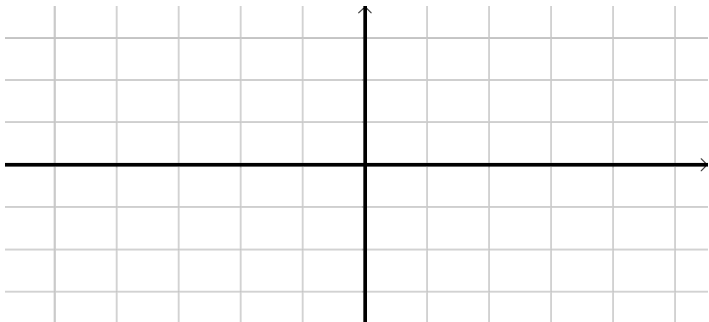To graph a quadratic, we need to find the important points:

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Using the

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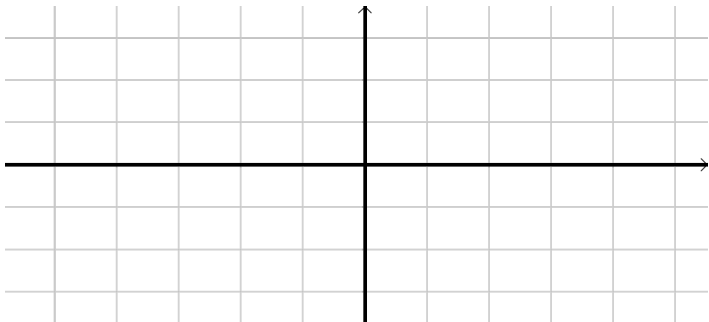$x = 0 \Rightarrow y = 0^2 + 4 \cdot 0 + 5 = 5$
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Using the
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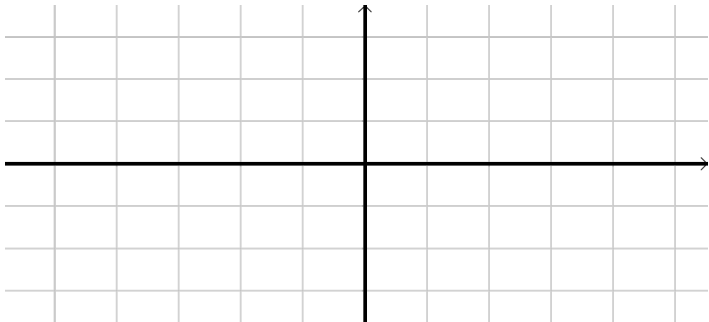$x = 0 \Rightarrow y = 0^2 + 4 \cdot 0 + 5 = 5$
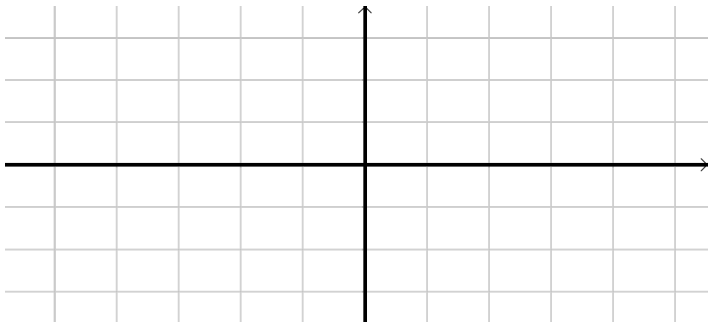vertex

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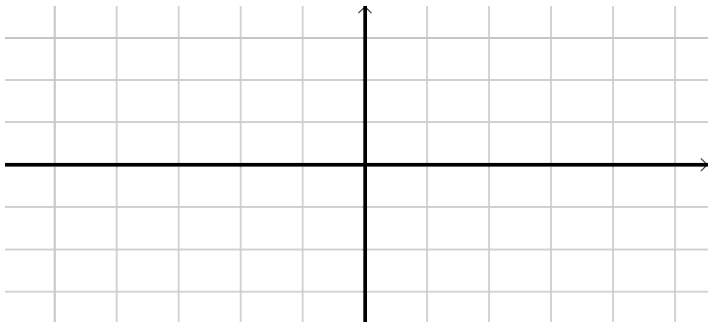$y = 0 \Rightarrow 0 = x^2 + 4x + 5$
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vertex

$x-$int: none
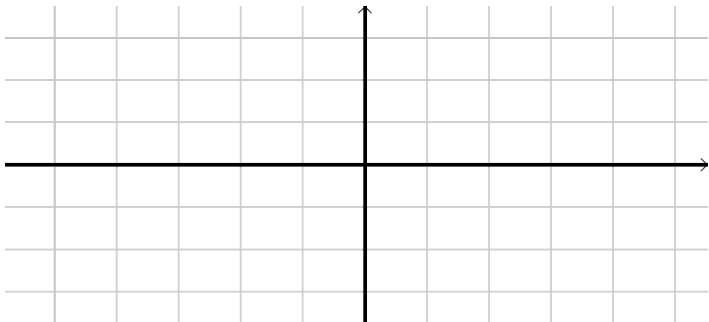$y = 0 \Rightarrow 0 = x^2 + 4x + 5$
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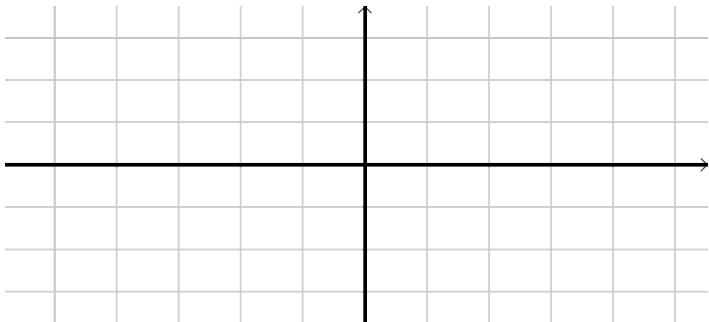$y = 0 \Rightarrow 0 = x^2 + 4x + 5$
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vertex

$h = \frac{-b}{2a}$

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$y = 0 \Rightarrow 0 = x^2 + 4x + 5$

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vertex

$h = \frac{-b}{2a} = \frac{-4}{2 \cdot 1}$

$x-$int: none

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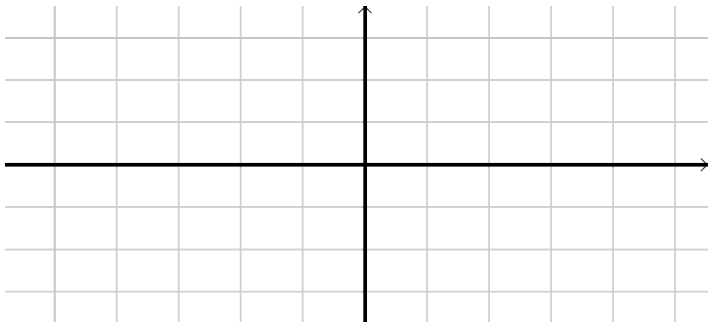$x-$int: none
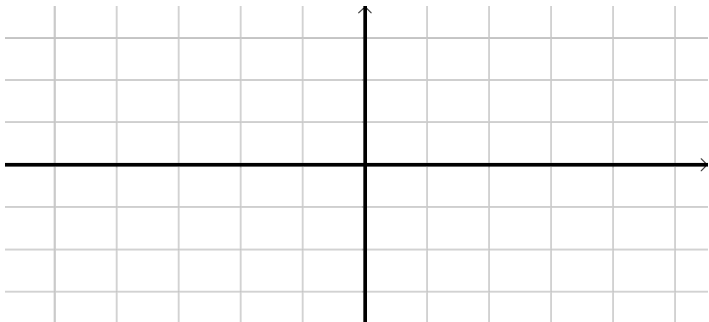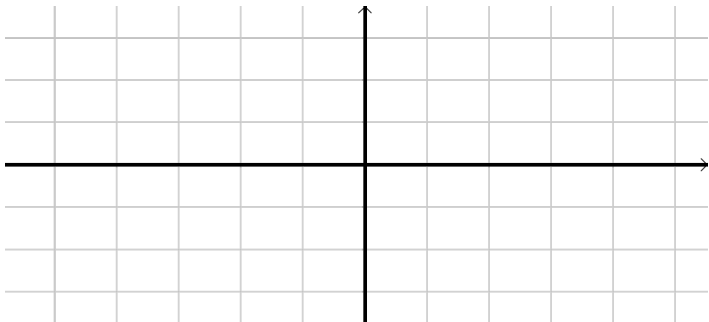$y = 0 \Rightarrow 0 = x^2 + 4x + 5$
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k

$x-$int: none

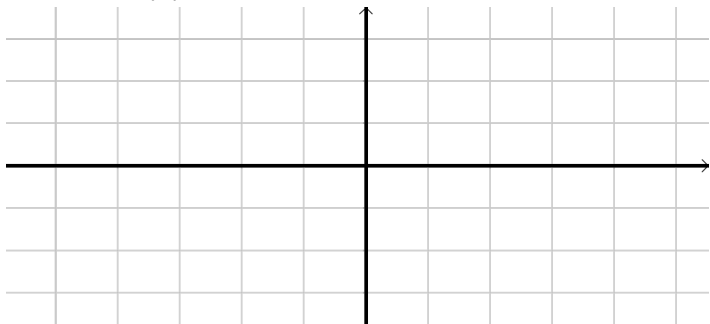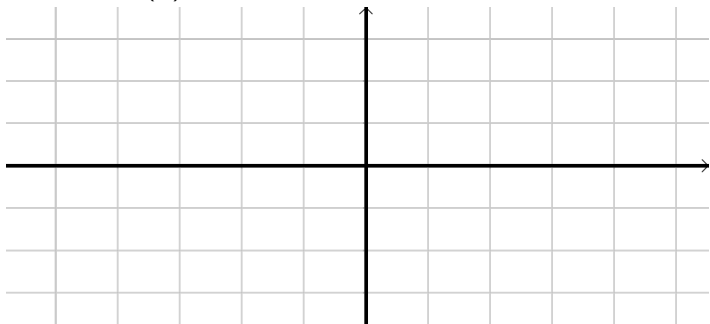$y = 0 \Rightarrow 0 = x^2 + 4x + 5$

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$k = f(h) = f(-2)$

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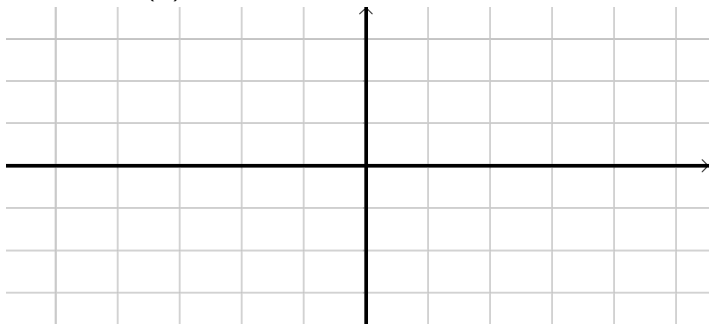$y = 0 \Rightarrow 0 = x^2 + 4x + 5$

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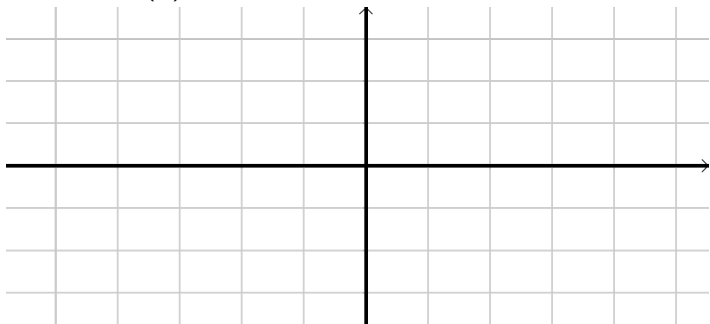$x-$int: none

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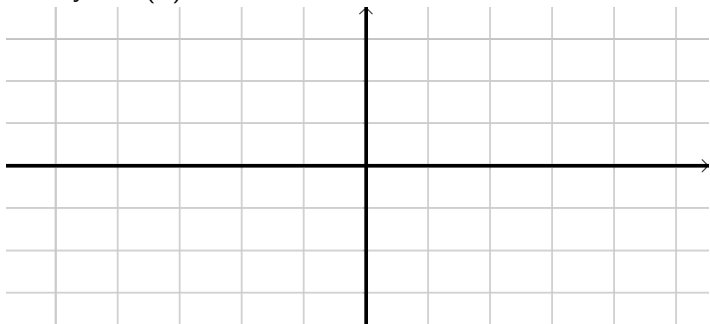
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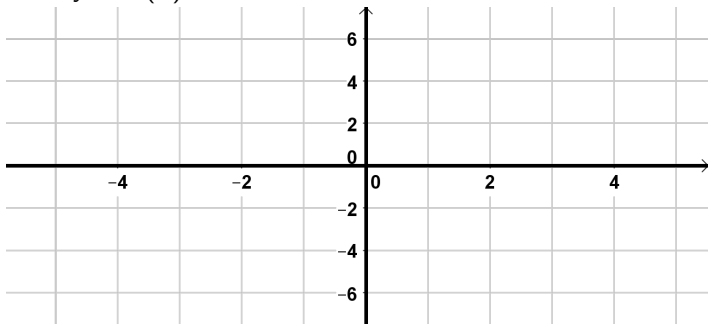But there are no solutions

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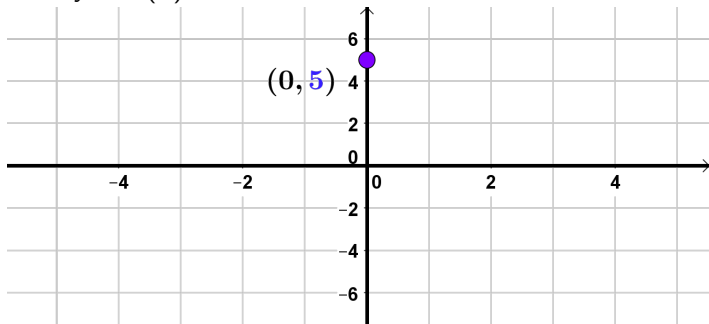$x-$int: none
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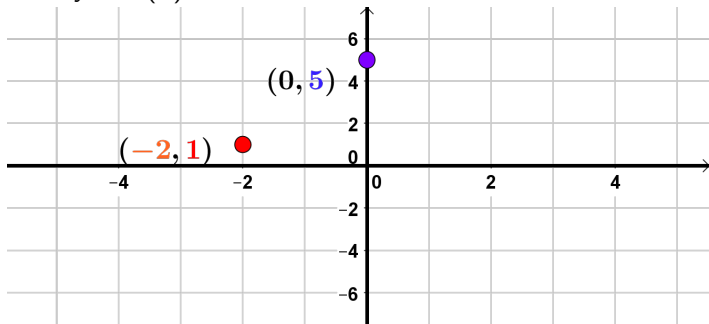$x-$int: none
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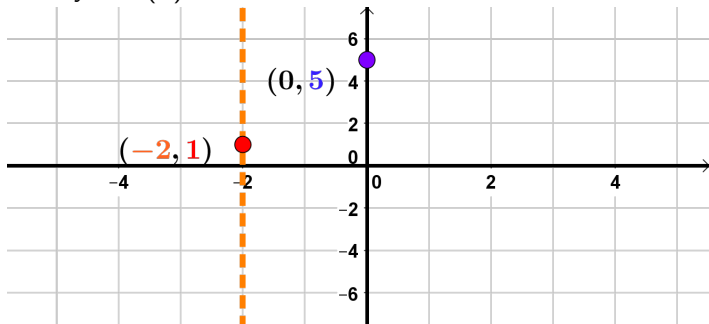$x-$int: none

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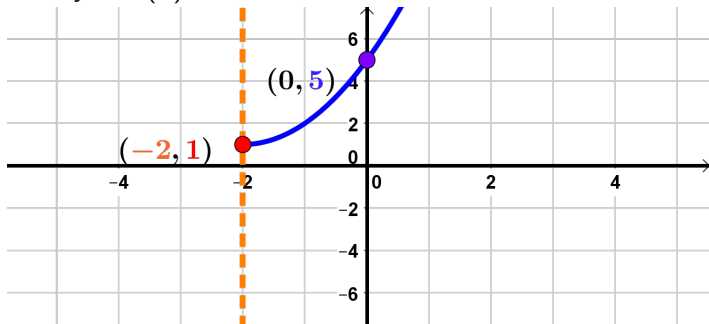$x-$int: none

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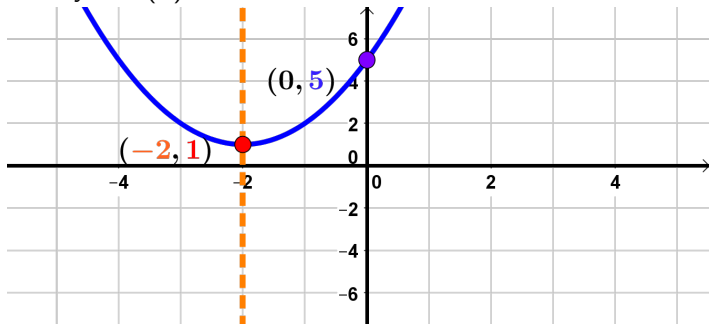But there are no solutions

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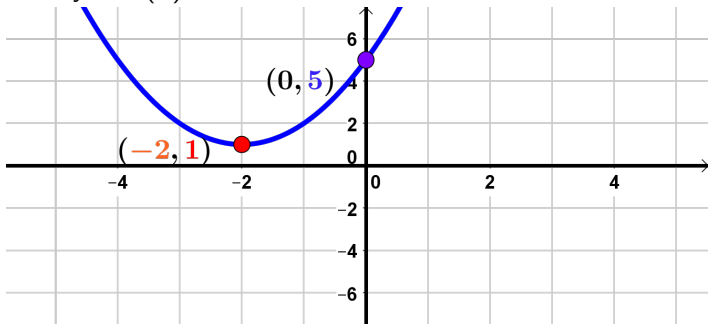$x-$int: none

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