Graphing Quadratic Equations with 2 variable - Example 2

Example: Sketch the graph of:

$$y = f(x) = -2x^2 + 4x + 6$$

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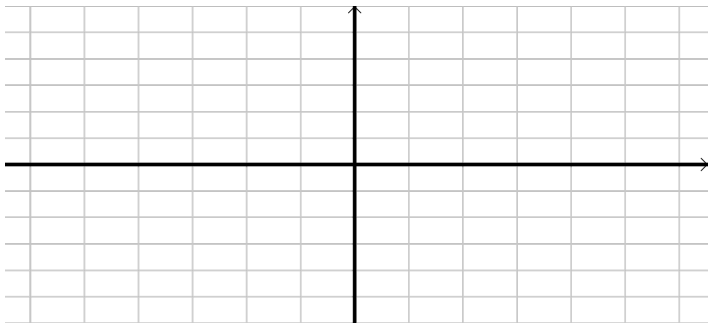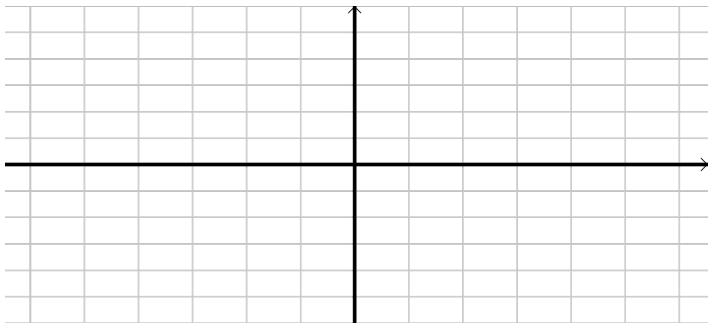
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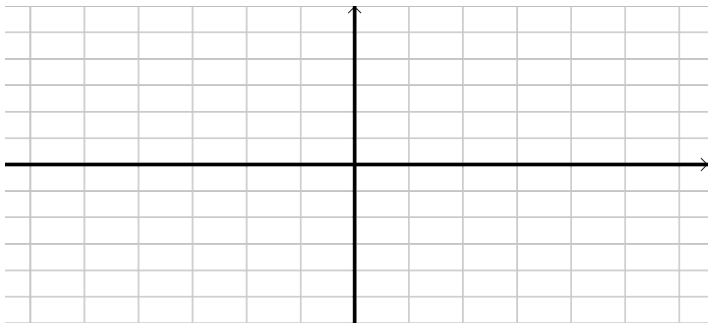To graph a quadratic, we need to find the important points:

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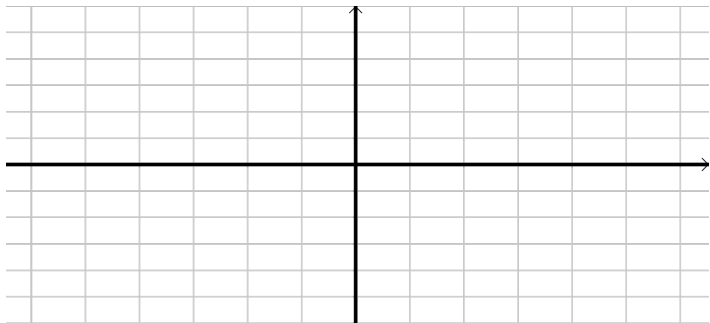$x = 0$

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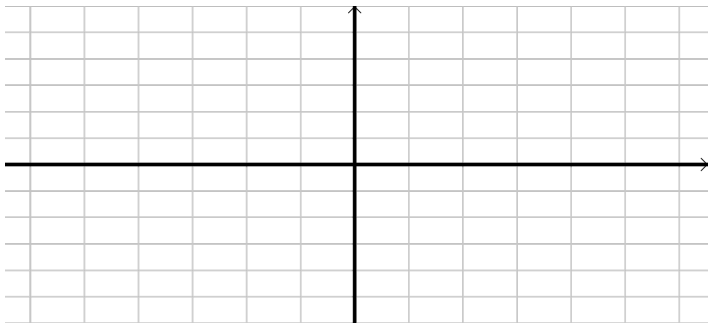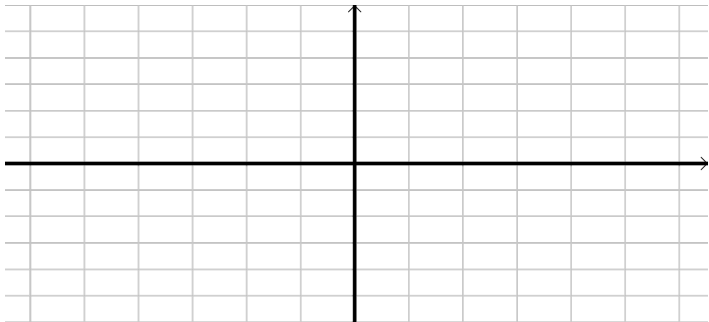To graph a quadratic, we need to find the important points:

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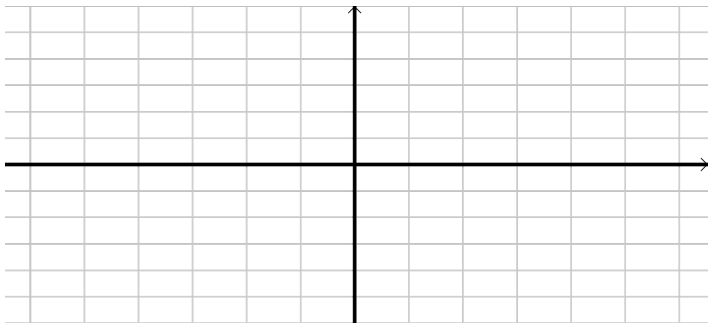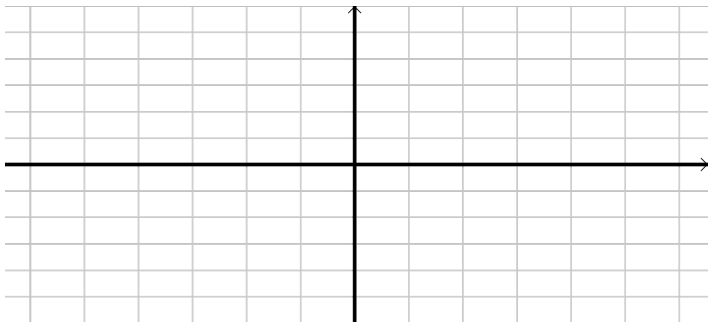$x = 0 \Rightarrow y = -2 \cdot 0^2 + 4 \cdot 0 + 6 = 6$

vertex

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$y = 0$

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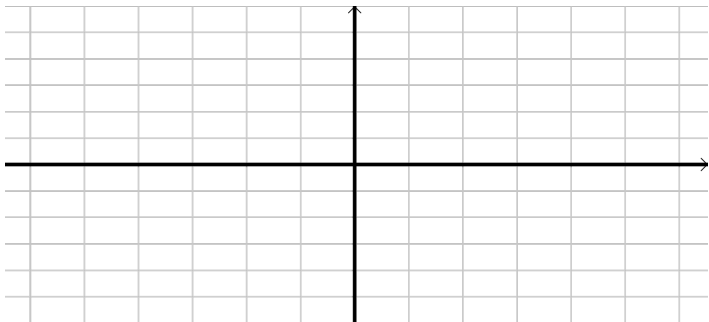To graph a quadratic, we need to find the important points:

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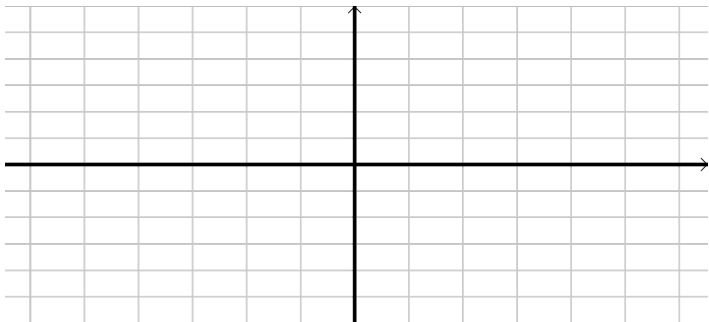$x = 0 \Rightarrow y = -2 \cdot 0^2 + 4 \cdot 0 + 6 = 6$

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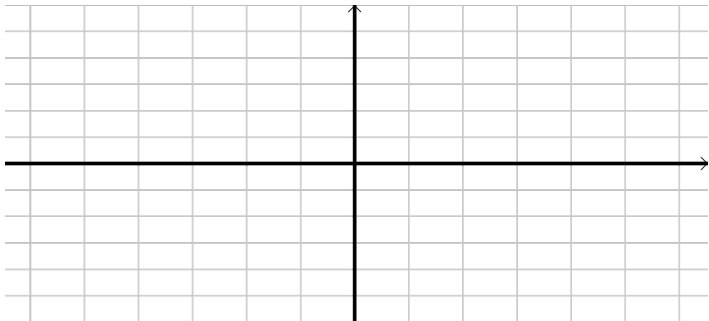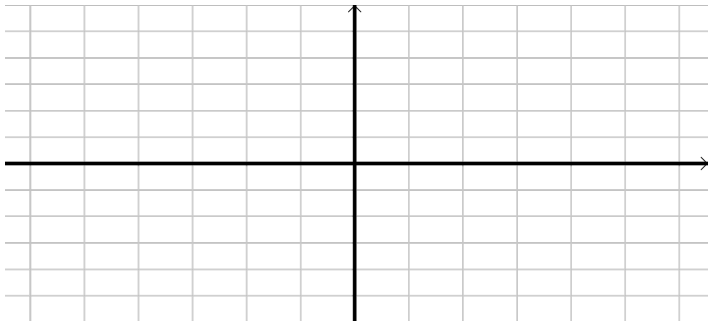$x = 0 \Rightarrow y = -2 \cdot 0^2 + 4 \cdot 0 + 6 = 6$
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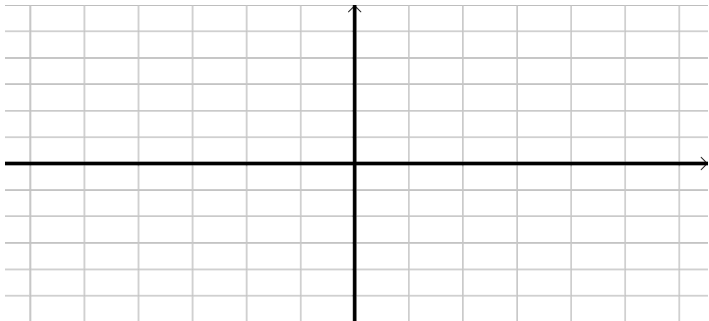$x-$int
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To graph a quadratic, we need to find the important points:

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$x-$int: $(-1, 0), (3, 0)$

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How do we solve this?

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vertex

h

$x-$int: $(-1, 0), (3, 0)$

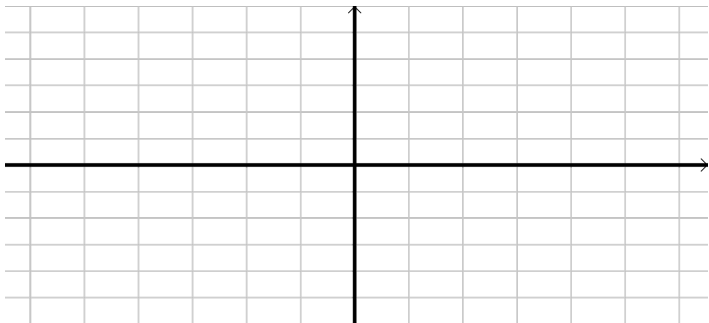$y = 0 \Rightarrow 0 = -2x^2 + 4x + 6$

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vertex

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

$x-$int: $(-1, 0), (3, 0)$

$y = 0 \Rightarrow 0 = -2x^2 + 4x + 6$
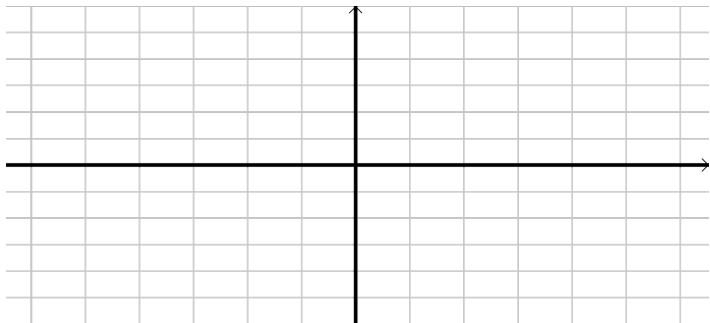
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vertex

$h = \frac{-b}{2a} = \frac{-4}{2(-2)}$

$x-$int: $(-1, 0), (3, 0)$

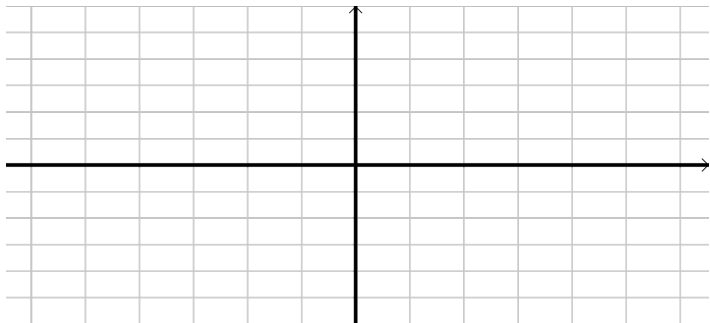$y = 0 \Rightarrow 0 = -2x^2 + 4x + 6$
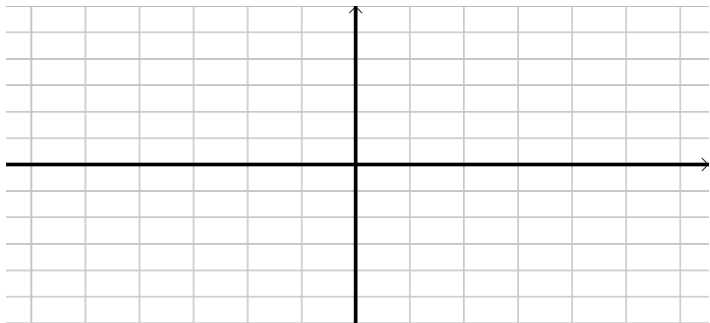
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vertex

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

$x-$int: $(-1, 0), (3, 0)$

$y = 0 \Rightarrow 0 = -2x^2 + 4x + 6$
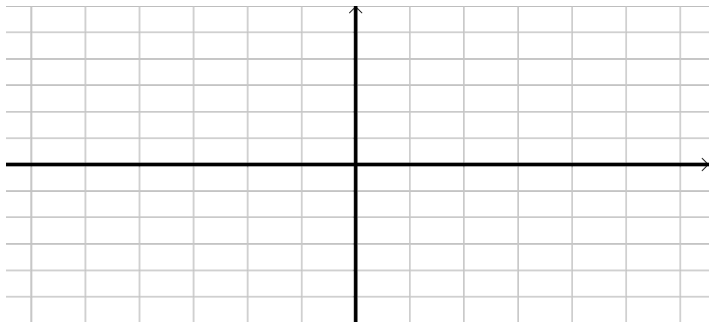
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k

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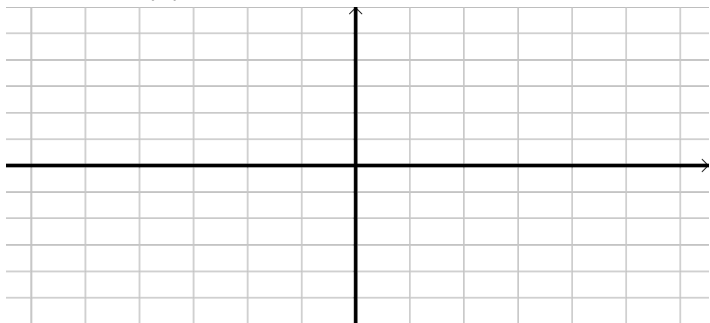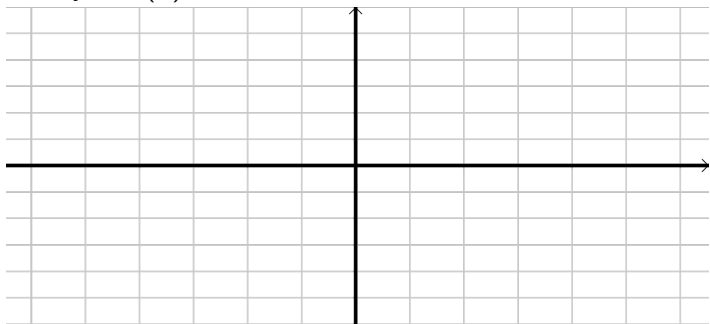
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$k = f(h) = f(1)$

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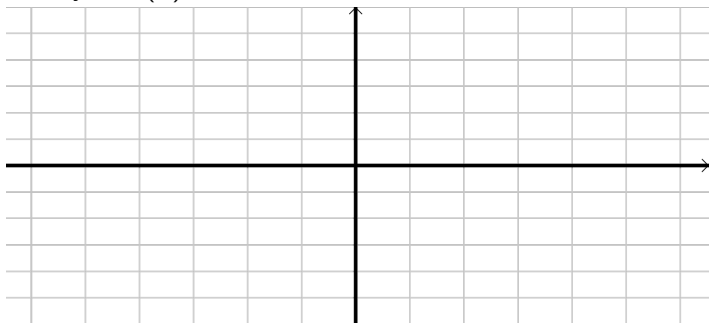$y = 0 \Rightarrow 0 = -2x^2 + 4x + 6$

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vertex

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

$k = f(h) = f(1) = 8$

$x-$int: $(-1, 0), (3, 0)$

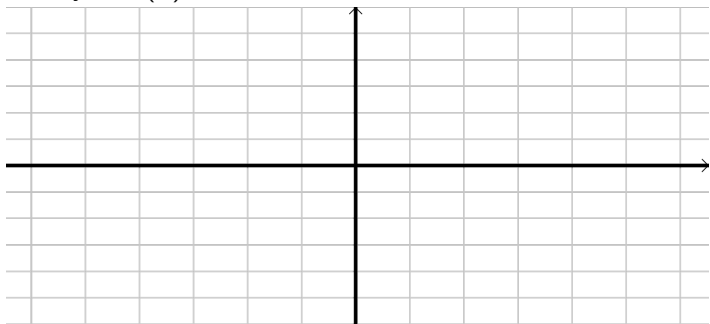$y = 0 \Rightarrow 0 = -2x^2 + 4x + 6$

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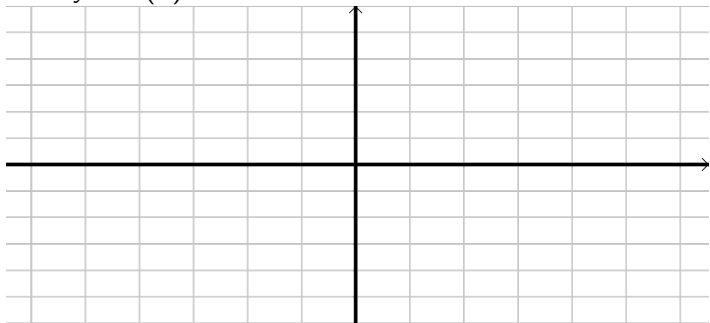$y = 0 \Rightarrow 0 = -2x^2 + 4x + 6$

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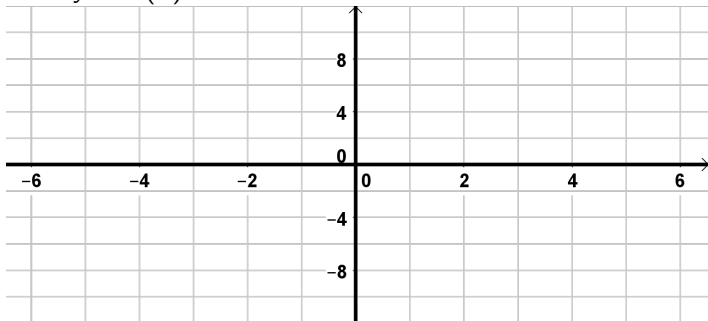$y = 0 \Rightarrow 0 = -2x^2 + 4x + 6$

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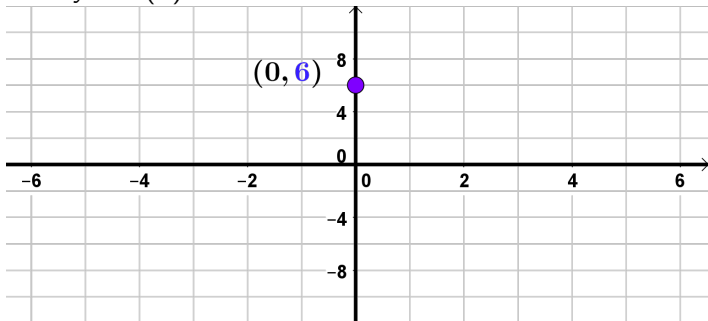$y = 0 \Rightarrow 0 = -2x^2 + 4x + 6$

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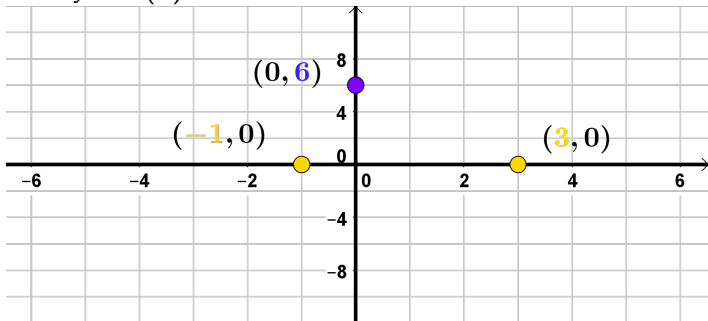$y = 0 \Rightarrow 0 = -2x^2 + 4x + 6$

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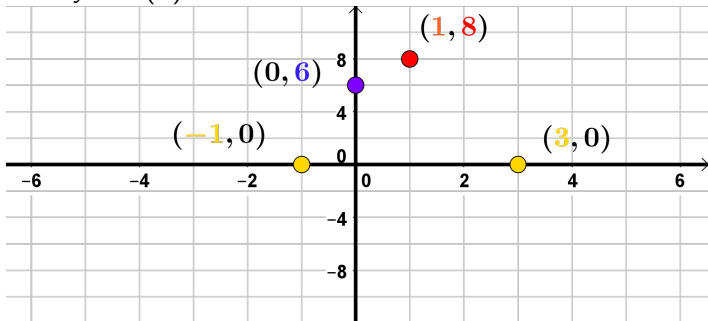$y = 0 \Rightarrow 0 = -2x^2 + 4x + 6$

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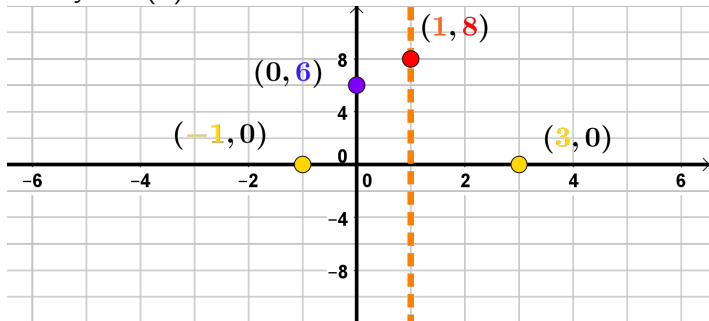$y = 0 \Rightarrow 0 = -2x^2 + 4x + 6$

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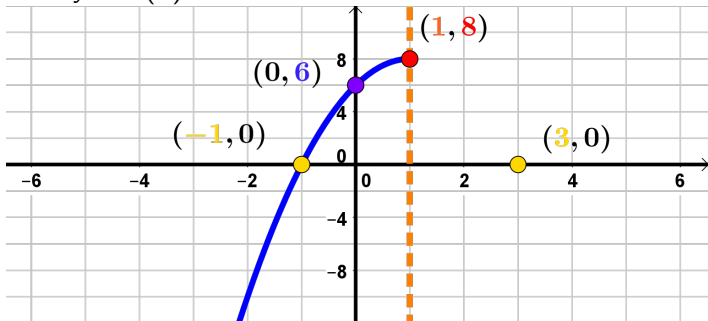$y = 0 \Rightarrow 0 = -2x^2 + 4x + 6$

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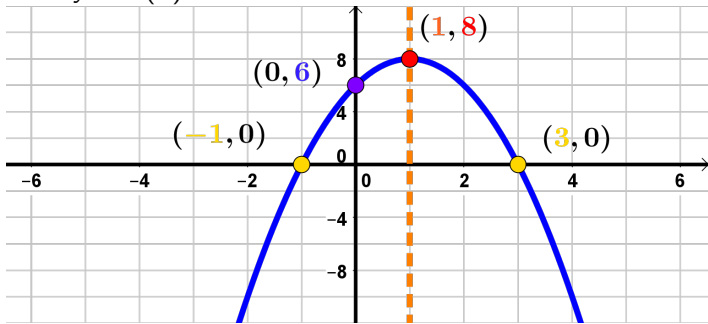$y = 0 \Rightarrow 0 = -2x^2 + 4x + 6$

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$k = f(h) = f(1) = 8$

$x-$int: $(-1, 0), (3, 0)$

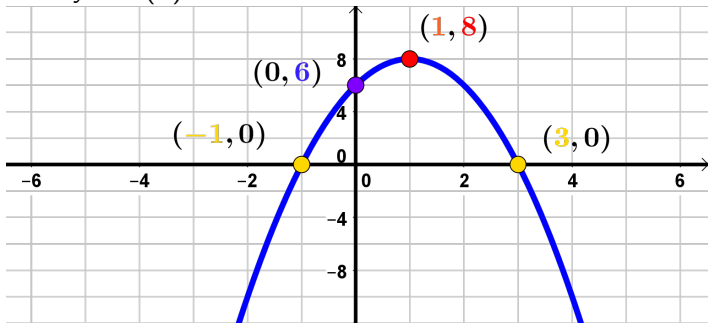$y = 0 \Rightarrow 0 = -2x^2 + 4x + 6$

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