Graphing Quadratic Equations with 2 variable - Example 4

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Example: Sketch the graph of:

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y=f(x)=x^{2}-10 x+25
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To graph a quadratic, we need to find the important points:

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$y$-int

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To graph a quadratic, we need to find the important points:
$y$-int
$x$-int
vertex

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Example: Sketch the graph of:

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$$



To graph a quadratic, we need to find the important points:
$y$-int
$x$-int
$x=0$
vertex

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

$$
\begin{aligned}
& \begin{array}{l}
y-i n t \\
x=0 \Rightarrow y=0^{2}-10 \cdot 0+25 \\
\text { vertex }
\end{array}
\end{aligned}
$$

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

$$
\begin{aligned}
& y-\text { int } \\
& x=0 \Rightarrow y=0^{2}-10 \cdot 0+25=25 \\
& \text { vertex }
\end{aligned}
$$

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$y$-int: $(0,25)$
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vertex

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

$$
\begin{array}{ll}
y \text {-int: }(0,25) & x \text {-int } \\
x=0 \Rightarrow y=0^{2}-10 \cdot 0+25=25 & y=0 \\
\text { vertex } &
\end{array}
$$

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How do we solve this?

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vertex
$h=\frac{-b}{2 a}$
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vertex
$h=\frac{-b}{2 a}=\frac{-(-10)}{2 \cdot 1}$
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k
$x$-int: $(5,0),(5,0)$
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vertex
$h=\frac{-b}{2 a}=\frac{-(-10)}{2 \cdot 1}=5$
$k=f(h)$

$$
\begin{aligned}
& x \text {-int: }(5,0),(5,0) \\
& y=0 \Rightarrow 0=x^{2}-10 x+25
\end{aligned}
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& k=f(h)=f(5)
\end{aligned}
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