

Math 2

- take out HW
- Grab toolkits

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#9 $n^2 - 10n + 19 = 5$
 $\frac{+19 \quad +19}{}$
 $n^2 - 10n + 25 = 24 + 25$
 $(n - 5)^2 = 49$
 $\frac{-49 \quad -49}{}$
 $(n - 5)^2 - 49 = 0$

#20. $2x^2 + 4x + 1 = 0$
 $\frac{+1 \quad +1}{}$

$2x^2 + 4x + 1 = 1 + 1$
 $2(x^2 + 2x + 1) = 1 + 1$

$2(x + 1)^2 = 3$
 $\frac{-3 \quad -3}{}$
 $2(x + 1)^2 - 3 = 0$


$\square = \left(\frac{b}{a}\right)^2$

$(x \pm \frac{b}{a})^2$

	x	+1	
x	x^2	$+1x$	$\text{II} + \text{III} = 2$
+1	$+1x$	1	$\text{I} \cdot \text{IV} = 1$

$(x+1)(x+1) = 1 + 1$
 $(x+1)^2$

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	<p>Vertex form</p> $f(x) = a(x-h)^2 + k$ $y = a(x-5)^2 - 2$
<p>X-intercepts</p>	<p>Plug in 0 for y + solve</p> <p>ex] $a(x-5)^2 - a = 0$</p> $\frac{a(x-5)^2}{a} = \frac{a}{a}$ $\sqrt{(x-5)^2} = \sqrt{1}$ $x - 5 = \pm 1$ $x = 5 \pm 1$ $x = 5 + 1 = 6$ $x = 5 - 1 = 4$
<p><u>Vertex</u></p>	$f(x) = a(x-h)^2 + k$ <p>vertex: (h, k)</p> <p>opp same</p> <p>ex: $a(x-5)^2 - 2$</p> <p>opp same</p> <p>vertex: (5, -2)</p> <p>Created with Doceri </p>

the x-coordinate of the vertex (h-value)

$$\boxed{x=5}$$


Axis of Sym -

Plug in 0 for x → solve for y.

y-int

ex) $f(x) = a(x-5)^2 - 2$

$$\begin{aligned} & \quad \quad \quad \uparrow \\ & = a(0-5)^2 - 2 \\ & = a(-5)^2 - 2 \\ & = a(25) - 2 \\ & = 50 - 2 = \boxed{48} \end{aligned}$$

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- ① Complete the square (A11)
- ② vertex (A11)
- ③ x-int (mult of 3) 3, 6, 9, 12, 15, 18, 21, 24, 27

#1. $3x^2 - 6x - 24 = 0$ $\square = \left(\frac{b}{a}\right)^2$

$+24$ $+24$

$\frac{3}{3}x^2 - \frac{6}{3}x + \square = 24 + \square$

$3(x^2 - 2x + \square) = 24 + \square$

$3(x-1)^2 - 27 = 0$

opp, same
Vertex: (1, -27)

x-int: $3(x-1)^2 - 27 = 0$

$\frac{3(x-1)^2}{3} = \frac{27}{3}$

$\sqrt{(x-1)^2} = \sqrt{9}$

$x-1 = \pm 3$

$\frac{+1}{+1} \quad \frac{+1}{+1}$

$x = 1 \pm 3$

$\begin{matrix} 1+3 = 4 \\ * 1-3 = -2 \end{matrix}$

	x	-1	
x	x^2	$-1x$	II+III = -2
		$\frac{1}{3}$ $\frac{2}{4}$	
-1	$-1x$	$+1$	I · IV = 1
			↓
			-1 -1

$(x-1)(x-1) = (x-1)^2$

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