

November 16, 2015

- \* No Class Friday
- \* No Quiz this week
- \* Exam # 3 - Monday, November 30<sup>th</sup>

Nov 16-9:50 AM

$f(x) = a(x-h)^2 + k$

- ①  $a$ 
  - (a) Narrow  $a > 1$
  - (b) Wide  $0 < a < 1$
- ② opens
  - (a) Up  $a > 0$
  - (b) Down  $a < 0$

Horizontal Change:  $(h, k) \rightarrow$  Vertex  
 Vertical Change: where  $h = x$  is the Axis of Symmetry

Nov 16-10:00 AM

$g(x) = -3(x+4)^2 - 7$

$h = -4$   
 $k = -7$   
 Vertex:  $(-4, -7)$   
 A.S.:  $x = -4$  a line!  
 Opens: Down

\* Solutions: 2 Complex  
 Shape: narrow

\* y-intercept:  $(0, -35)$   
 \* x-intercept(s):  
 $x = -4 \pm \frac{i\sqrt{21}}{3}$

Nov 16-10:07 AM

$0 = -3(x+4)^2 - 7$

$\frac{7}{-3} = \frac{-3(x+4)^2}{-3}$

$\pm \sqrt{-\frac{7}{3}} = \sqrt{(x+4)^2}$

$\pm \frac{i\sqrt{7}}{\sqrt{3}} = x+4$

$\pm \frac{i\sqrt{7}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = x+4$

$\pm \frac{i\sqrt{21}}{3} = x+4$

$-4 \pm \frac{i\sqrt{21}}{3} = x$

2 Complex Solution

Nov 16-10:22 AM

$h(x) = -\frac{3}{4}(x-2)^2 - \frac{2}{3}$

$h =$   
 $k =$

Vertex:  $\frac{2}{3} = \frac{3}{4}(x-2)^2$

A.S.:  $x = 2$

Opens:  $-\frac{3}{4}$

Shape:  $\frac{2}{3} \cdot -\frac{4}{3} = (x-2)^2$

Solutions:  $\pm \sqrt{-\frac{8}{9}} = \sqrt{(x-2)^2}$

y-int:  $\pm \frac{2i\sqrt{2}}{3} = x-2$

x-int(s):  $2 \pm \frac{2i\sqrt{2}}{3} = x$

Nov 16-10:29 AM