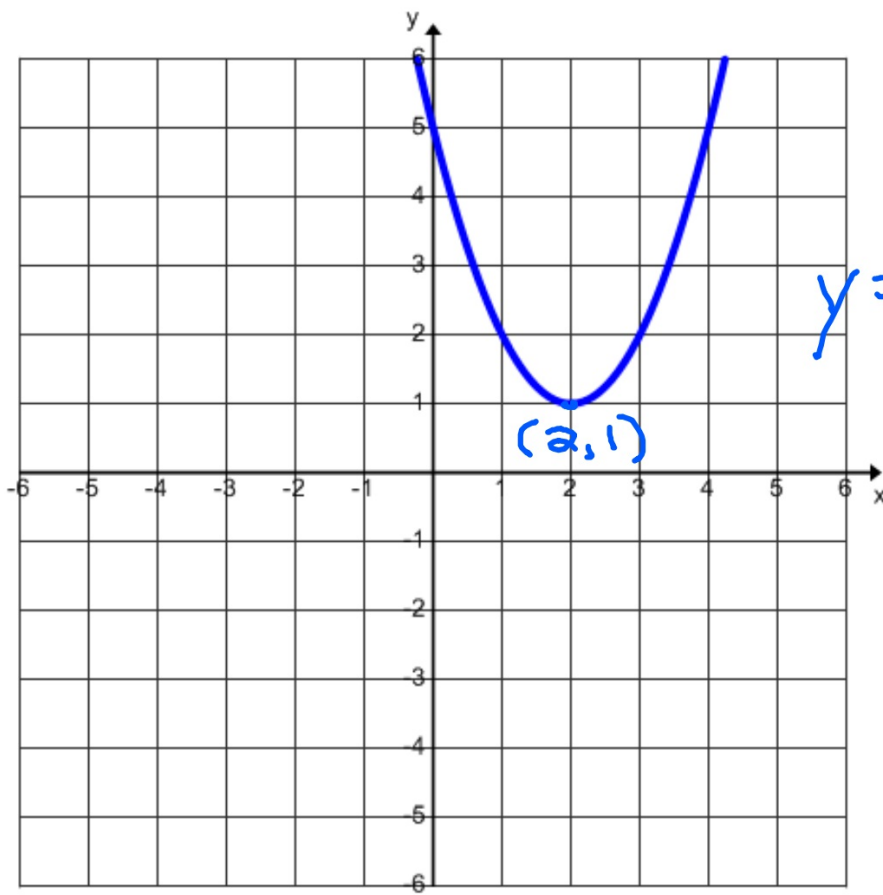
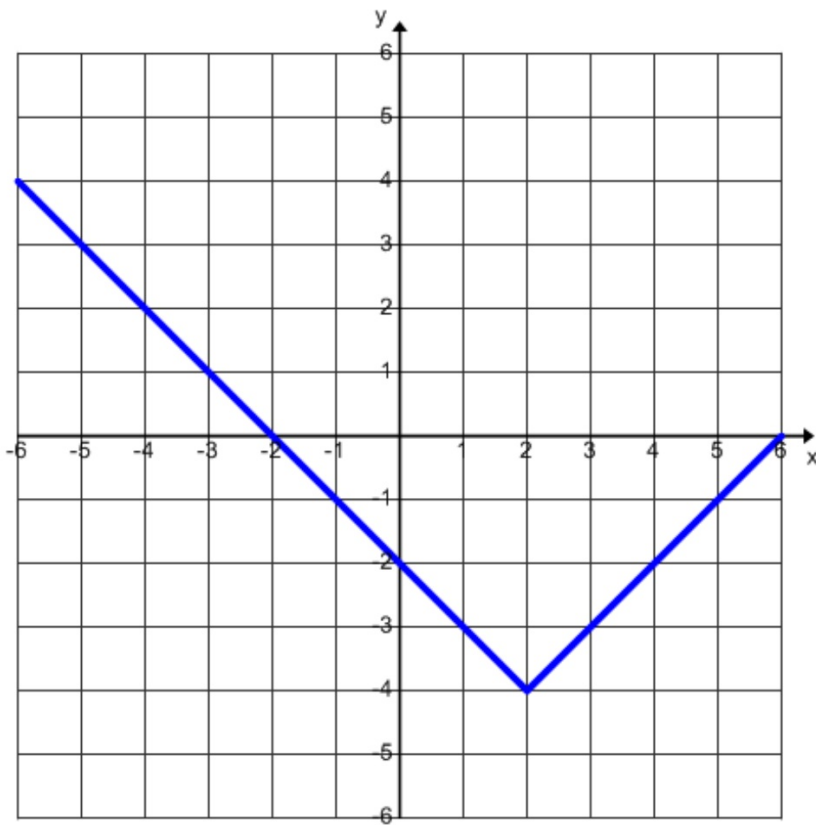


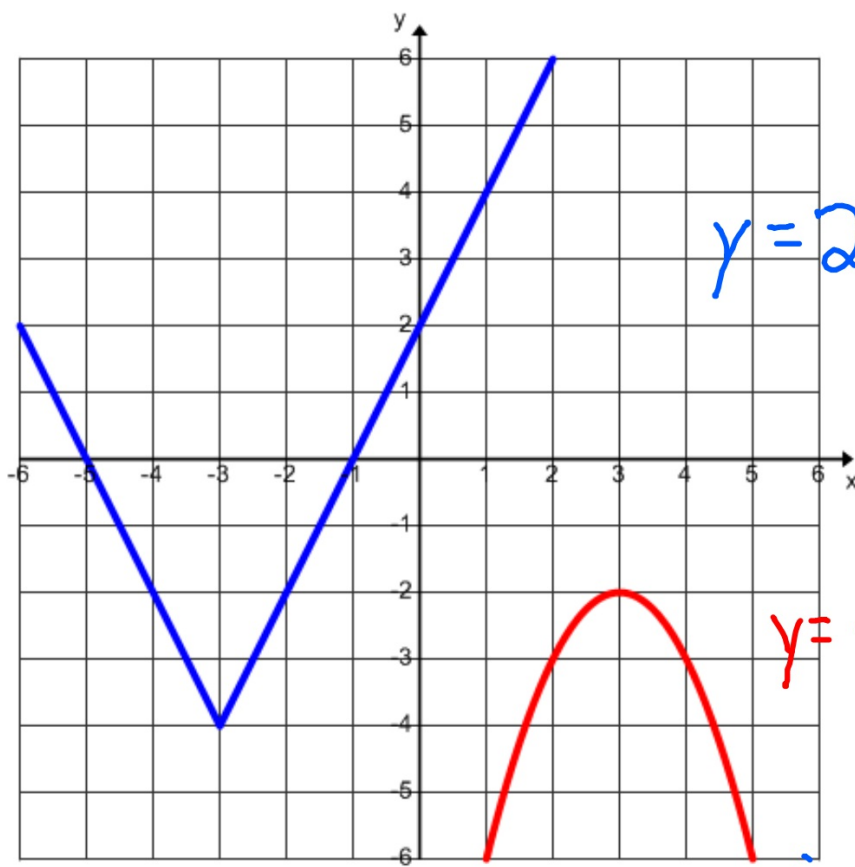
$$y = x^2 - 4$$



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

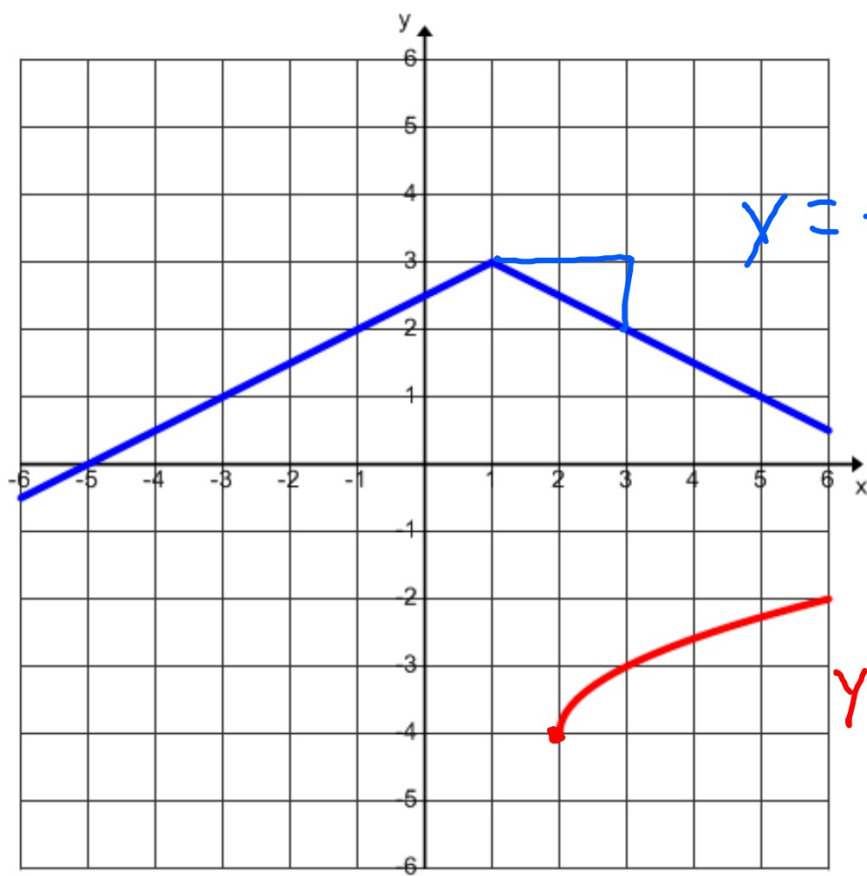


$$y = |x - 2| - 4$$



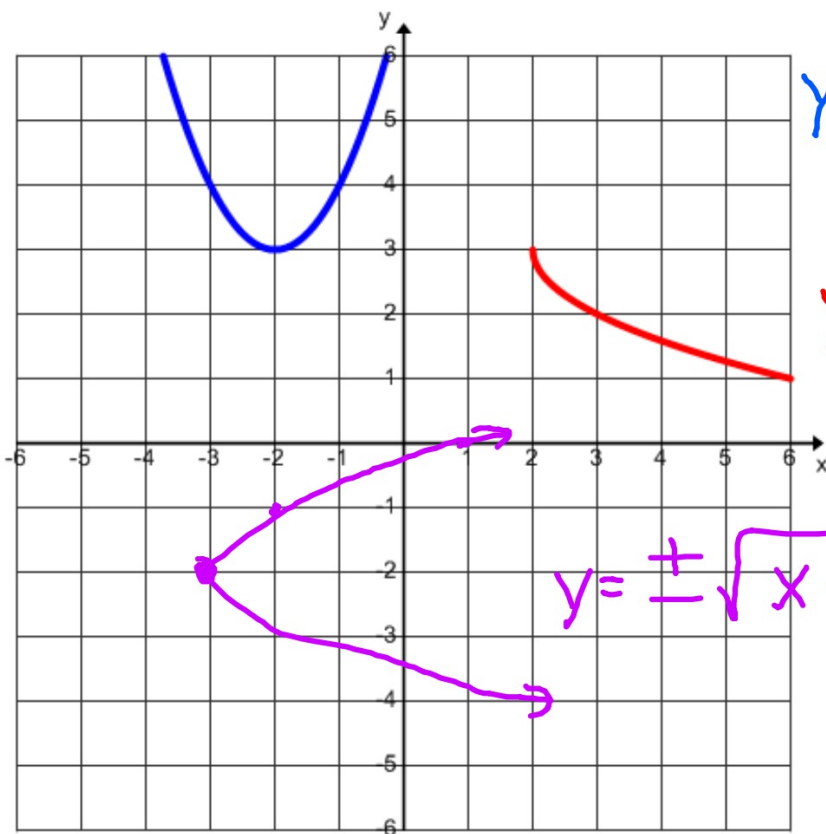
$$y = 2|x + 3| - 4$$

$$y = -(x - 3)^2 - 2$$



$$y = -\frac{1}{2} / x - 1 / + 3$$

$$y = \sqrt{x - 2} - 4$$



$$y = (x+2)^2 + 3$$

$$y = -\sqrt{x-2} + 3$$

$$y = \pm\sqrt{x+3} - 2$$

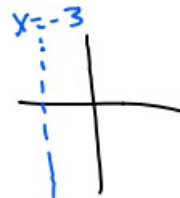
$$\textcircled{1} \quad y = \frac{x^4 + 6x - 1}{x + 3}$$

Horizontal Asymptote

Bobo Both Ends DC
None

Vertical Asymptote

$$\begin{array}{r} x+3=0 \\ -3 \quad -3 \\ \hline x=-3 \end{array}$$



$$\textcircled{2} \quad y = \frac{2x^2 + 3x}{x^2 - x - 20}$$

Horizontal

Bobo Both Ends DC

$$\begin{array}{l} y = \frac{2}{1} \\ y = 2 \end{array}$$

Vertical

$$x^2 - x - 20 = 0$$

$$(x-5)(x+4) = 0$$

$$\begin{array}{r} x-5=0 \\ +5 \quad +5 \\ \hline x=5 \end{array} \quad \begin{array}{r} x+4=0 \\ -4 \quad -4 \\ \hline x=-4 \end{array}$$

$$\textcircled{3} \quad y = \frac{5}{x^2 - 4}$$

Horizontal

Bobo Both Ends DC
 $y=0$

Vertical

$$x^2 - 4 = 0$$

$$(x-2)(x+2) = 0$$

$$\begin{array}{r} x-2=0 \\ x=2 \end{array} \quad \begin{array}{r} x+2=0 \\ x=-2 \end{array}$$

$$x = 2, -2$$

$$x = \pm 2$$

⑤ Is there a slant on
 $y = \frac{x+2}{x^2-10}$

No Top is not 1
larger than
bottom

⑥ Find slant on

$$y = \frac{x^2+6x+1}{x+2}$$

$$\begin{array}{r} x+4 \\ x+2 \overline{) x^2+6x+1} \\ \underline{-(x^2+2x)} \\ 4x+1 \end{array}$$

Slant: $y = x+4$ $\frac{4x+1}{4x+8}$
X

⑦ Is there a hole on

$$y = \frac{x^2+7x+10}{x+3}$$

$$y = \frac{(x+2)(x+5)}{x+3}$$

No hole

Graph $y = \frac{x^2 + 3x + 2}{x + 1}$

$$y = \frac{(x+2)\cancel{(x+1)}}{\cancel{x+1}}$$

$$y = x + 2 \quad [x \neq -1]$$

slope \uparrow y-int \uparrow

