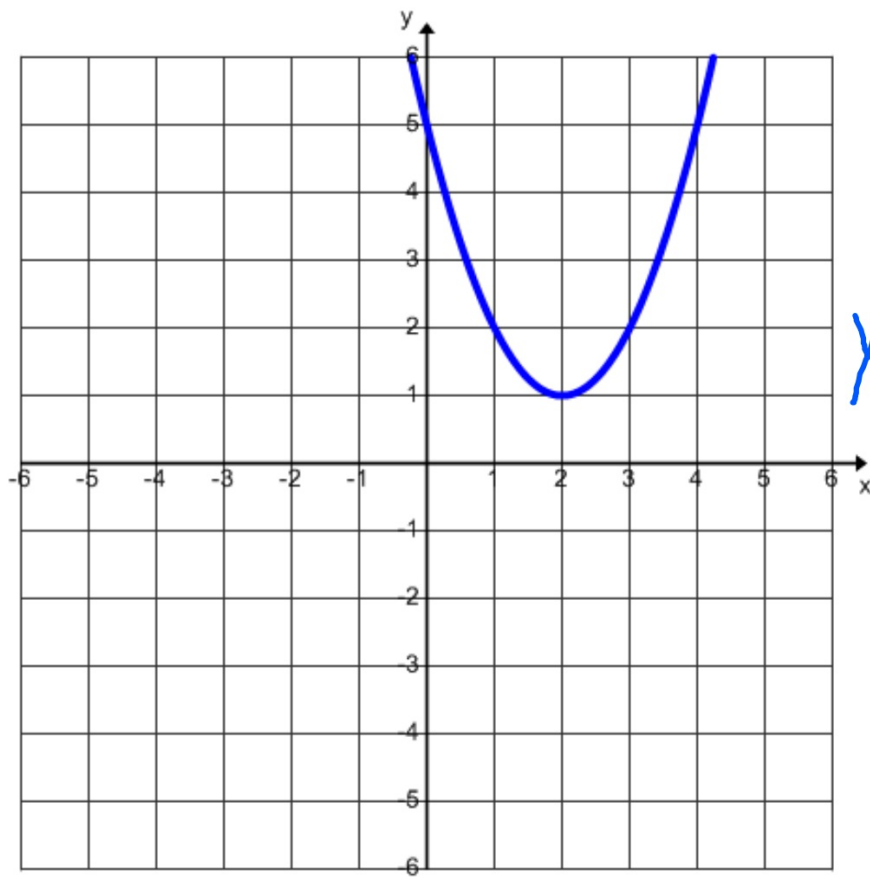
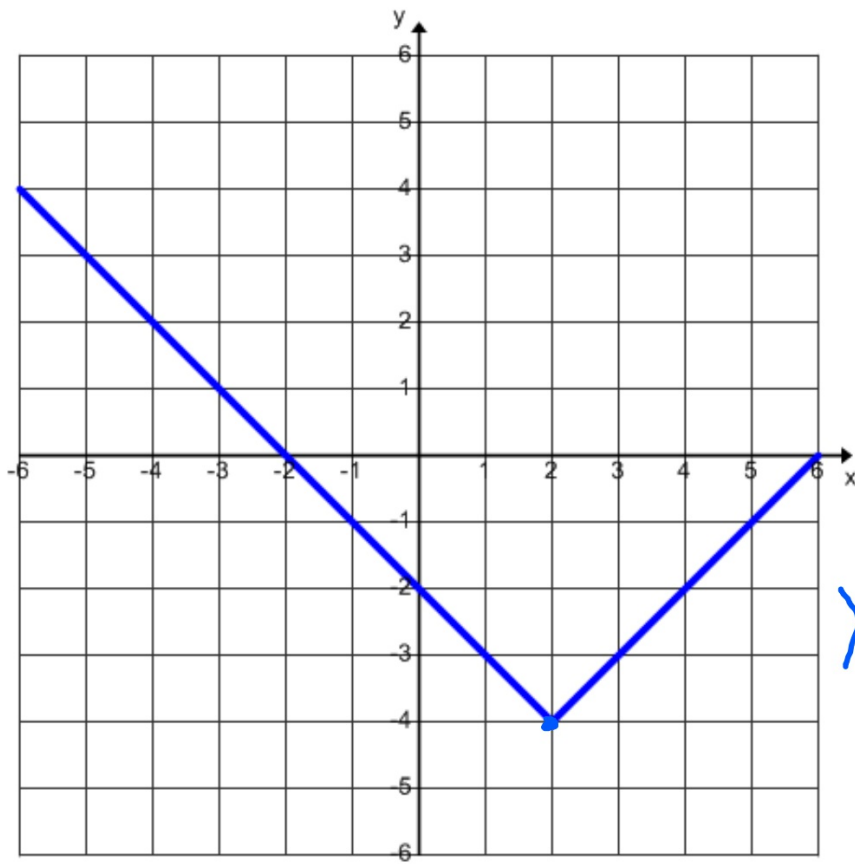


$$y = x^2 - 4$$

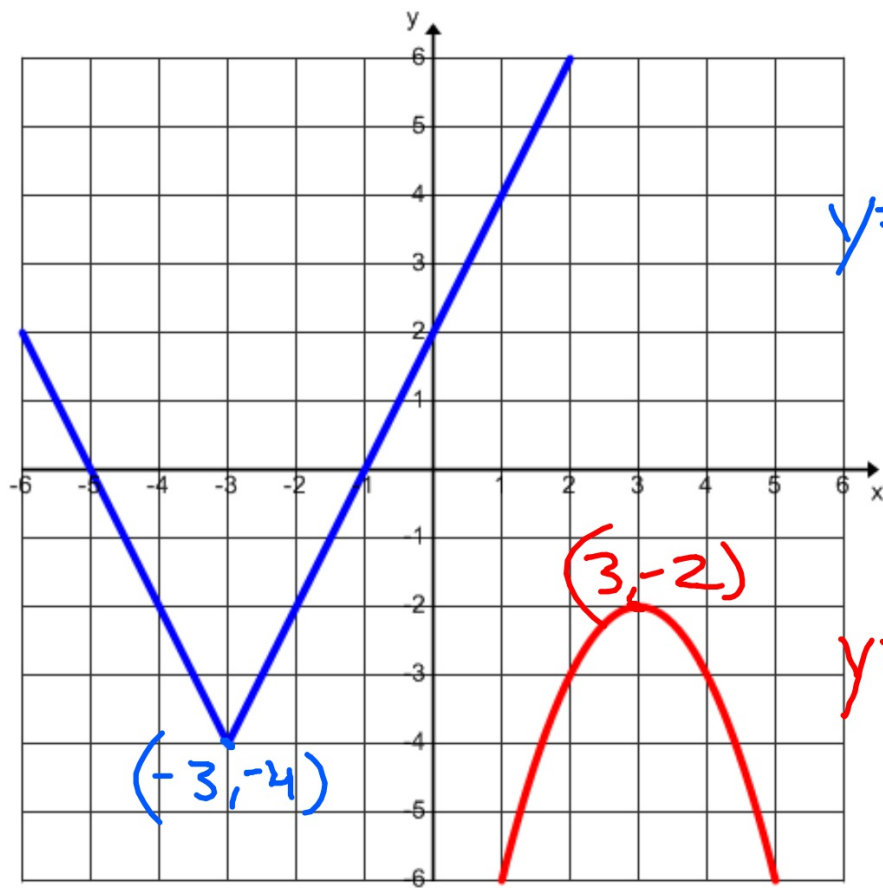
$$(\cancel{x \neq 0})^2 - 4$$



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

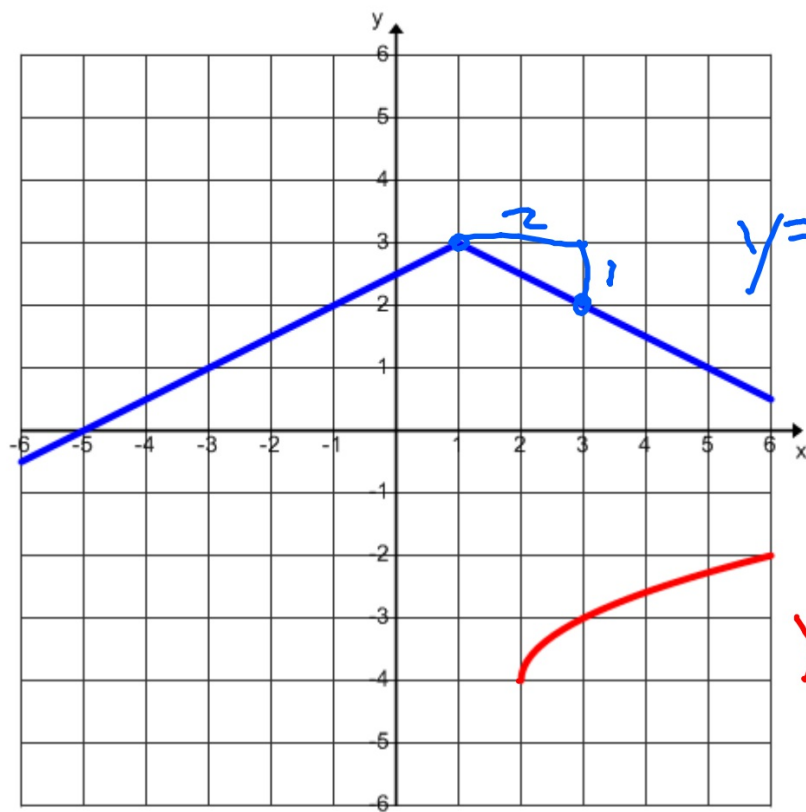


$$y = |x - 2| - 4$$



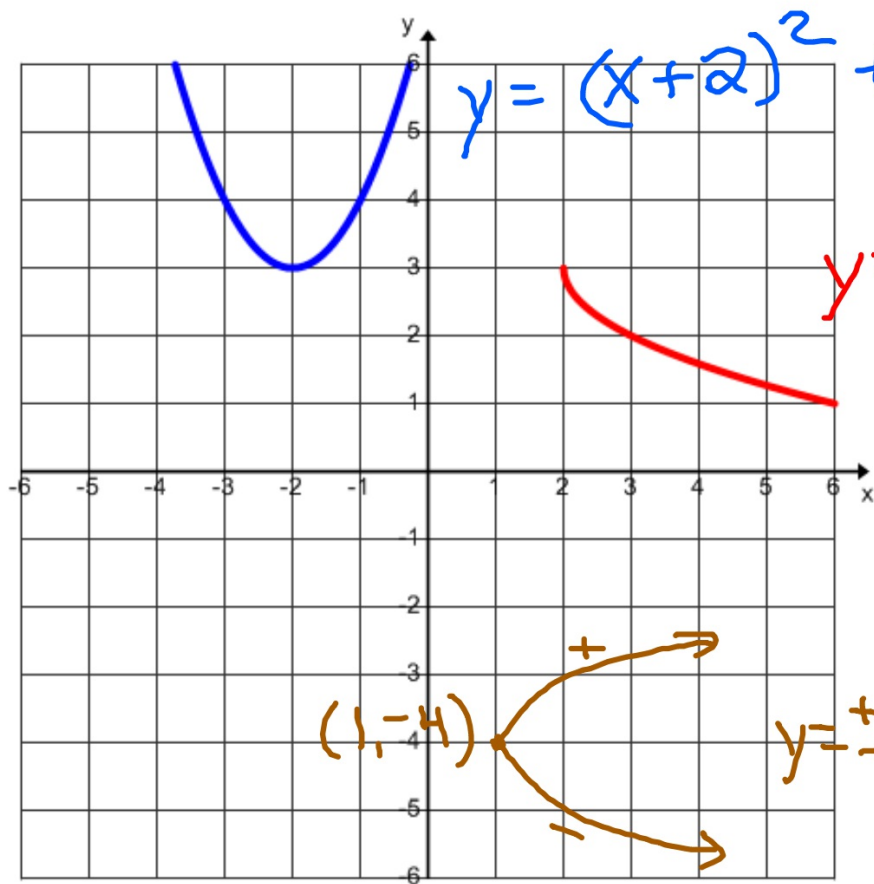
$$y = 2|x + 3| - 4$$

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



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

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



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

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

$$(1, -4)$$

$$y = \pm\sqrt{x-1} - 4$$

$$\textcircled{1} \quad y = \frac{x+8}{x^2-9}$$

Horizontal As.

Bobo Both Ends DC

$$y=0$$

Vertical As.

$$x^2-9=0$$

$$(x+3)(x-3)=0$$

$$x+3=0 \quad x-3=0$$

$$x=-3 \quad x=3$$

$$x=\pm 3$$

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

Horizontal

Ends DC

Divide Coefficients

$$y = \frac{2}{1}$$

$$y=2$$

Vertical

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

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

$$x+4=0 \quad x-5=0$$

$$x=-4 \quad x=5$$

$$\textcircled{3} \quad y = \frac{8x+5}{2x^2}$$

Horizontal

Bobo $y=0$

Both
Ends DC

Vertical

$$\frac{8}{2}x^2 = \frac{0}{2}$$

$$\sqrt{x^2} = \sqrt{0}$$

$$x=0$$

$$\textcircled{4} \quad y = \frac{x^2 + 7x + 1}{x + 2}$$

$$\begin{array}{r} x+5 \\ x+2 \overline{) x^2 + 7x + 1} \\ \underline{-(x^2 + 2x)} \\ 5x + 1 \end{array}$$

slant at

$$y = x + 5$$

$$\begin{array}{r} 5x + 1 \\ \underline{5x + 10} \\ x \end{array}$$

$\textcircled{5}$ Is there a hole @

$$y = \frac{x^2 + 7x + 12}{x + 2}$$

$$y = \frac{(x+3)(x+4)}{x+2}$$

No crossing out, so no hole.

⑥ Graph $y = \frac{x^2 + 3x + 2}{x + 1}$

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

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

↑ ↑
slope y-int.

