

$$\begin{aligned} & 5f(0) - f(6) \\ \text{1d.) } & 5 \cdot 9 - (-119) \\ & 45 + 119 \\ & 164 \end{aligned}$$

$$\begin{aligned} f(6) &= -3(6)^2 - 2(6) + 1 \\ &= -3 \cdot 36 - 12 + 1 \\ &= -108 - 12 + 1 \\ &= -119 \end{aligned}$$

$$\text{1c.) } f(-2.8)$$

$$\begin{aligned} 3[x] + 9 &= 3[-2.8] + 9 \\ 3(-3) + 9 &= 0 \end{aligned}$$

$$3b.) y = (3 - 2x)^2 - 1$$

Key point: $(\frac{3}{2}, -1)$

x	y
1	0
2	0

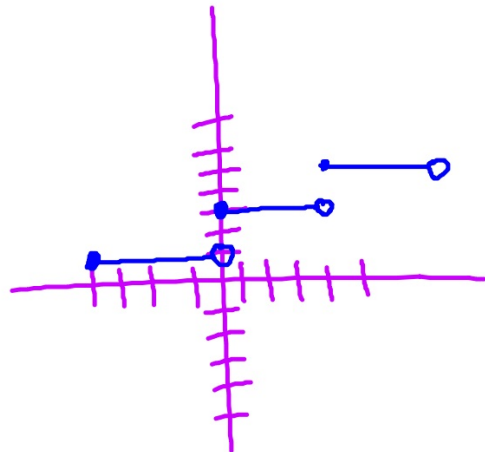


$$y = 2 \left[\frac{x}{4} \right] + 3$$

Key point: $(0, 3)$

length of bar: $\frac{1}{b} = \frac{1}{4} = 4$

distance: $a = 2$



$$7.) y \leq 8$$

$$x - y \leq 2 \quad \bullet \quad y \geq x - 2$$

$$y \geq 2x - 8 \quad \bullet$$

$$y \geq -4x + 8 \quad \bullet$$

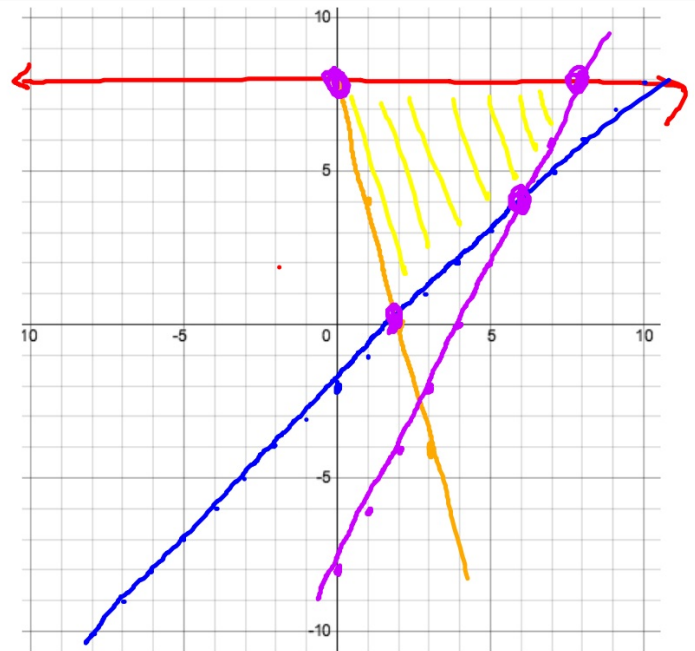
(x,y)	$3x - 8y$
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$(2,0)$	6
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$(0,8)$	-64
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$(6,4)$	
---------	--

$(8,8)$	
---------	--



$$18a.) f(x) = \frac{x - x^3}{5x^5 + x}$$

Even? Yes

$$\frac{(-x) - (-x)^3}{5(-x)^5 + -x}$$

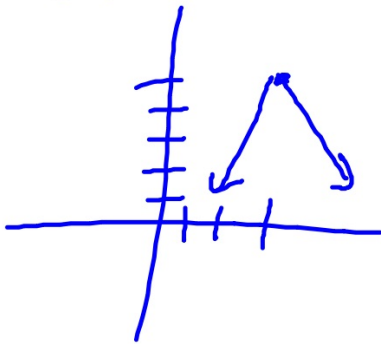
$$\frac{-x + x^3}{-5x^5 - x} = \frac{+(x - x^3)}{+(5x^5 + 1)}$$

odd?

$$-f = \frac{-x - (-x)^3}{5(-x)^5 + -x}$$

$$3a.) y = -2|x - 3| + 5$$

Key point (3, 5)



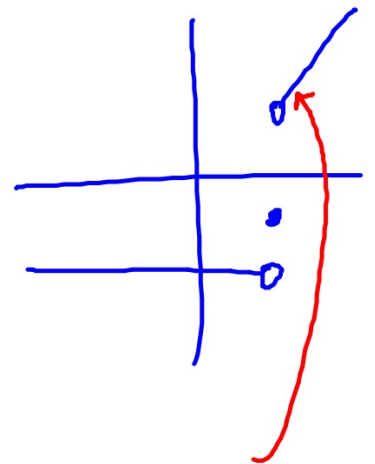
$$b.) y = (-(2x - 3))^2 - 1$$

$$d.) y = \frac{6}{-(x - 5)}$$

$$y = \frac{-6}{x - 5}$$

4b.)

$$f(x) = \begin{cases} -2, & x < 4 \\ -1, & x = 4 \\ 3x - 8, & x > 4 \end{cases}$$



$$\begin{aligned} (4, 4) \quad m = 3 \\ 4 &= 3(4) + b \\ -8 &= b \end{aligned}$$

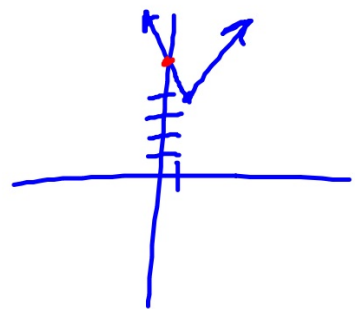
$$5.) y = 3|x-1| + 4$$

$$y = \begin{cases} -3x + 7, & x \leq 1 \\ 3x + 1, & x > 1 \end{cases}$$

$$m = 3 (1, 4)$$

$$4 = 3(1) + b$$

$$1 = b$$



$$(1, 4) \quad m = -3$$

$$4 = -3(1) + b$$

$$7 = b$$

$$(b.) \quad y = \sqrt[3]{-3(x+1)} - 2$$

18a.)

even

$$\frac{-x - (-x)^3}{5(-x)^5 + (-x)}$$

$$\frac{-x + x^3}{-5x^5 - x} = \frac{-(x - x^3)}{-(5x^5 + x)}$$

odd No

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

$$-y = \frac{-x + x^3}{-5x^5 - x}$$

$$y = \frac{x - x^3}{-5x^5 - x}$$

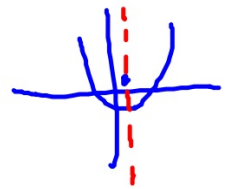
$$12b.) \quad 16y = 4x^2 - 8x$$

$$4x^2 - 8x = 16y$$

$$4(x^2 - 2x + 1) - 4 = 16y$$

$$4(x-1)^2 = \frac{16y+4}{4}$$

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



$$(x-1)^2 = 4\left(y + \frac{1}{4}\right)$$

Vertex $(1, -\frac{1}{4})$

Focus $(1, \frac{3}{4})$

Dir: $y = -\frac{1}{4}$

Axis $x = 1$

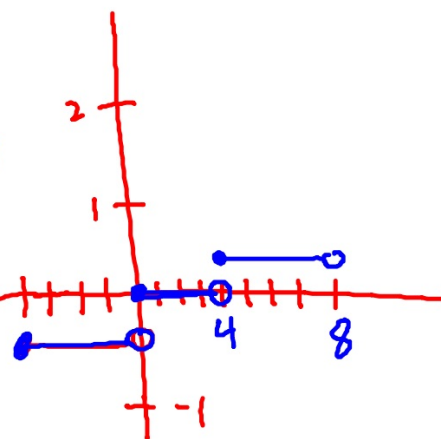
3c.) $y = \frac{1}{3} \left[\frac{x}{4} \right]$



bar length $\frac{1}{b} = \frac{1}{4} = 4$

distance between bars $a = \frac{1}{3}$

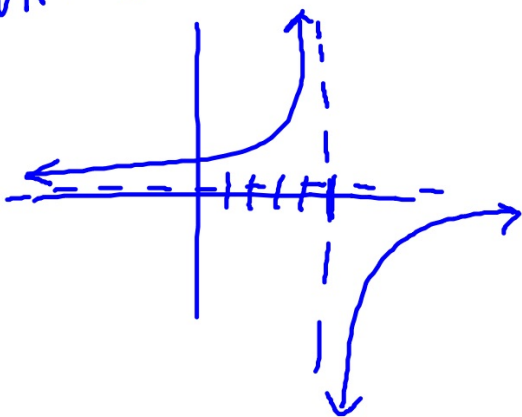
key point (0,0)



$$3d.) y = \frac{-6}{x-5}$$

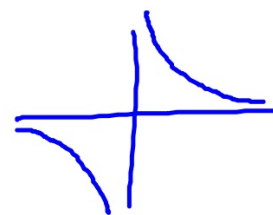
$$HA: y = 0$$

$$VA: x = 5$$



$$\frac{6}{5-x} = \frac{6}{-(x-5)}$$

x	y
4	6
6	-6



$$g.) \quad (-2, x, 1, z)$$

$$w = -2$$

$$y = 1$$

$$-4 + 3x - 1 + z = 5$$

$$-2 - x + 2 - 3z = -6$$

$$3x + z = 10$$

$$-x - 3z = -6$$

Symmetry

x-axis

$$y \rightarrow -y$$

y-axis

$$x \rightarrow -x$$

origin

$$x \rightarrow -x$$

$$y \rightarrow -y$$

$y = x$

$$x \rightarrow y$$

$$y \rightarrow x$$

20b.)

x-axis

$$3x^4 + 5x^2(-y)^6 - 7(-y)^8 = -9$$

Yes

y-axis

$$3(-x)^4 + 5(-x)^2y^6 - 7y^8 = -9$$

Yes

origin

Yes

y=x

$$3y^4 + 5y^2x^6 - 7x^8 = -9$$

No

$$2.) \{x \mid x \leq -1, x > 0\}$$

$$(-\infty, -1] \quad (0, \infty)$$

