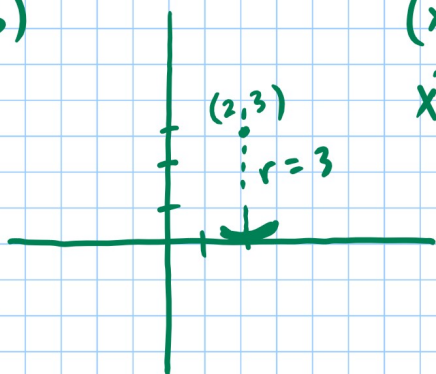


Circle Questions

65) Center = (2, 3)

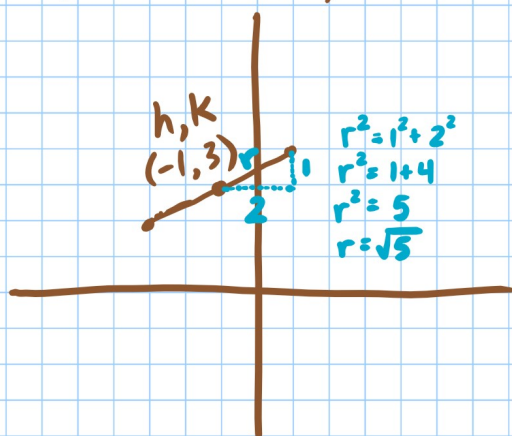


$$(x-2)^2 + (y-3)^2 = 3^2$$

$$x^2 - 4x + 4 + y^2 - 6y + 9 = 9$$

$$x^2 + y^2 - 4x - 6y + 4 = 0$$

67) (1, 4) and (-3, 2)



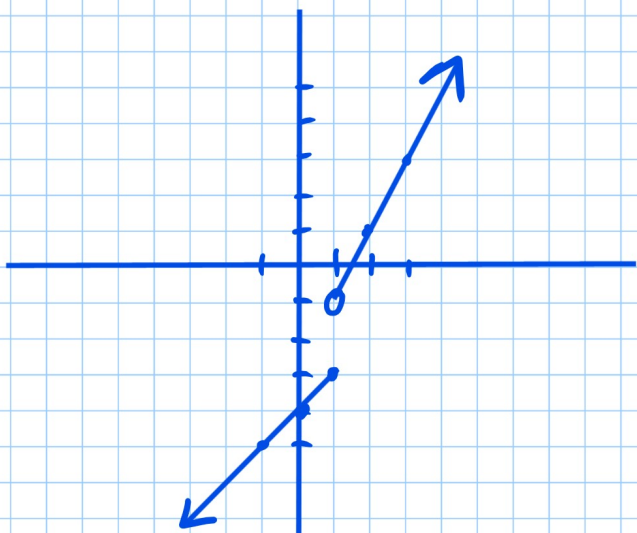
$$(x+1)^2 + (y-3)^2 = \sqrt{5}^2$$

$$x^2 + 2x + 1 + y^2 - 6y + 9 = 5$$

$$x^2 + y^2 + 2x - 6y + 5 = 0$$

Piecewise-Defined Functions

$$f(x) = \begin{cases} x-4 & \text{if } x \leq 1 \\ 2x-3 & \text{if } x > 1 \end{cases}$$



	x	y
use $x-4$	-1	-5
	0	-4
	1	-3
<hr/>		
use $2x-3$	1	-1
	2	1
	3	3

← closed circle

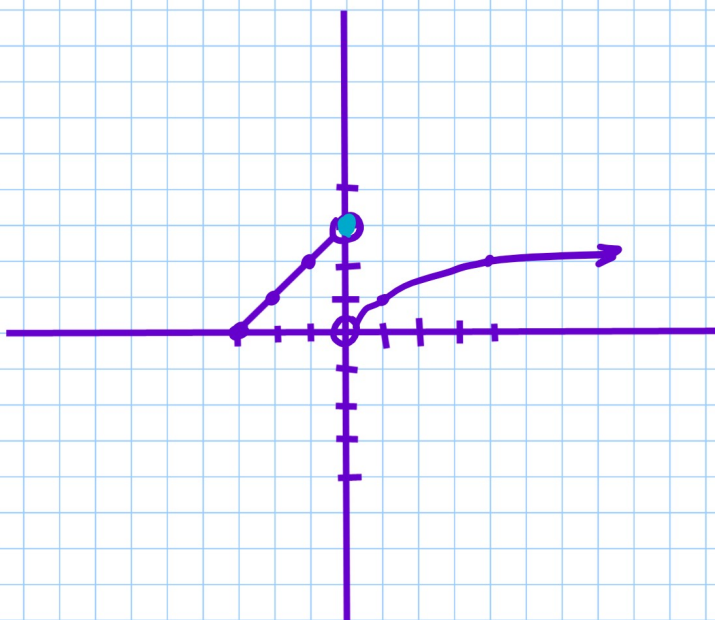
← open circle

$$\lim_{x \rightarrow 1^+} f(x) = -1$$

$$\lim_{x \rightarrow 1^-} f(x) = -3$$

$\lim_{x \rightarrow 1} f(x) =$ does not exist

$$\text{ex: } f(x) = \begin{cases} 3+x & \text{if } -3 \leq x < 0 \\ 3 & \text{if } x = 0 \\ \sqrt{x} & \text{if } x > 0 \end{cases}$$



	x	y	
3+x	-3	0	
	-2	1	
	-1	2	
	0	3	← open
3	0	3	← closed
	0	0	← open
√x	1	1	
	4	2	

p132-133 15, 16 19-27 odd (follow what we did), 31, 33