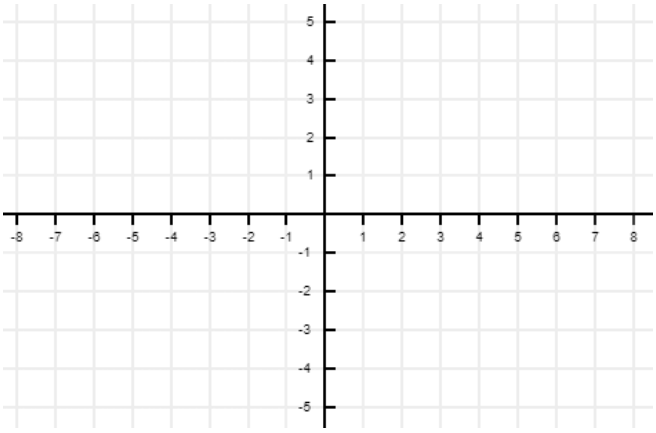
4.8B Vectors
AP Precalculus

Name: _____ **CA #2**

Directions: For the given vector-valued functions, complete the table and sketch the graph that the endpoints make.

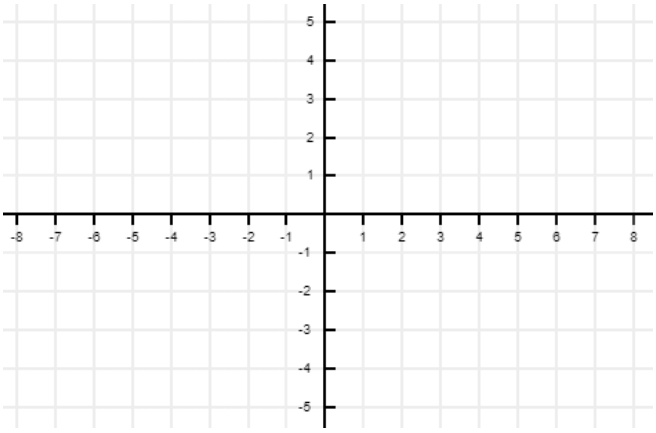
1) $f(t) = \langle 3t + 1, -t^2 \rangle$.

t	x	y
-2		
-1		
0		
1		
2		



2) $f(t) = \langle 4 \cdot 2^t, 2 \cdot 2^{-t} \rangle$.

t	x	y
-2		
-1		
0		
1		
2		



Directions: Find the domains of the vector-valued function.

3) $f(t) = \left\langle \frac{4}{t+5}, \sqrt{t-5} + 5 \right\rangle$

4) $f(t) = \langle 3t^3, t + 2 \rangle$

Directions: Describe the motion and find the speed of a particle in motion with the following vector at the given time.	
5) $v(t) = \langle t + 5, t^3 - t^2 \rangle, t = -3$	6) $v(t) = \langle 5t + 1, \sqrt{t + 4} + 9 \rangle, t = 12$

ANSWERS

1)

X	Y
-5	-4
-2	-1
1	0
4	-1
7	-4

2)

X	Y
0.5	8
1	4
2	2
4	1
8	0.5

3) $[5, \infty)$
4) $\mathbb{R}$
5) It moves to the right and down at a speed of $\sqrt{328} \approx 18.1$
6) It moves to the right and up at a speed of $\sqrt{3890} \approx 62.4$