

4.9 Vectors

AP Precalculus

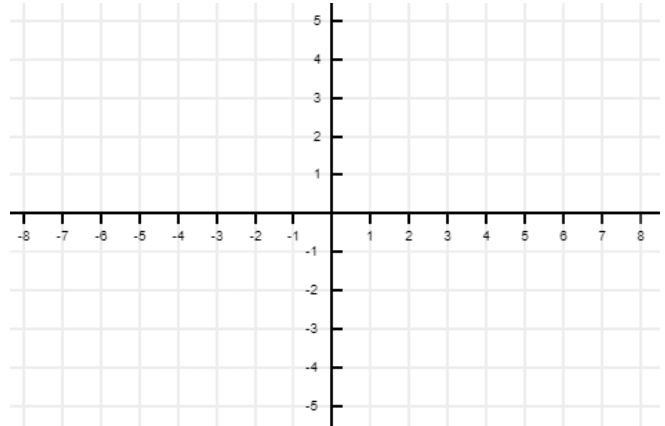
Name: _____

CA #1

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

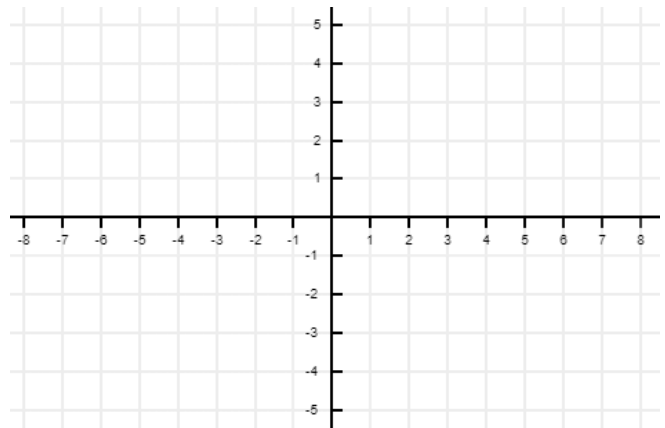
1) $f(t) = \langle t^2, 2t + 1 \rangle$.

t	x	y
-2		
-1		
0		
1		
2		



2) $f(t) = \left\langle |2t + 3|, \frac{4t+2}{2} \right\rangle$.

t	x	y
-2		
-1		
0		
1		
2		



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

3) $f(t) = \left\langle \frac{4}{t-3}, \sqrt{t+7} + 5 \right\rangle$

4) $f(t) = \left\langle 2^t, \frac{1}{t+3} \right\rangle$

Directions: Describe the motion and find the speed of a particle in motion with the following vector at the given time.

5) $v(t) = \langle 2(t + 5), t^2 - t \rangle, t = -3$

6) $v(t) = \left\langle \frac{t+5}{9}, \sqrt{t-4} - 8 \right\rangle, t = 40$

ANSWERS

1)

X	Y
4	-3
1	-1
0	1
1	3
4	5

2)

X	Y
1	-3
1	-1
3	1
5	3
7	5

3) $[-7, 3) \cup (3, \infty)$

4) $(-\infty, -3) \cup (-3, \infty)$

5) It moves to the right and up at a speed of $\sqrt{160} \approx 12.6$

6) It moves to the right and down at a speed of $\sqrt{29} \approx 5.4$