

4.1 Parametric Functions

AP Precalculus

Name: _____

CA #2

Find the coordinate point of the parametric function at the given value of the parameter.

1. At time $t = 2$, where is the parametric function

$$f(t) = \left(\frac{t+8}{5-2t}, \sqrt{t+7} \right)?$$

2. At time $t = -2$, where is the parametric function

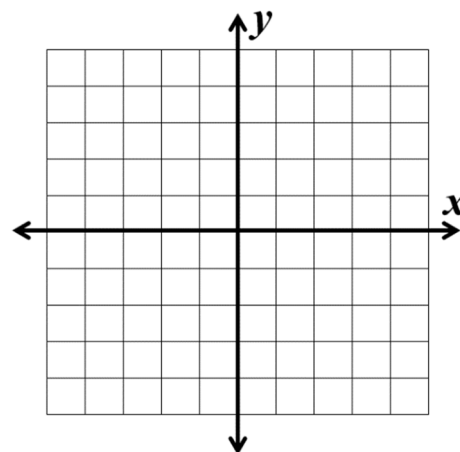
$$f(t) = (t + 10, 3 - t^2)?$$

3. Express the given parametric equations $x(t) = e^t$ and $y(t) = t^2$ as the single parametric function $f(t)$.

4. Given the parametric function $f(t) = \left(\frac{t}{2}, t^2 \right)$, complete the table of numerical values for the given values of t .
No calculator.

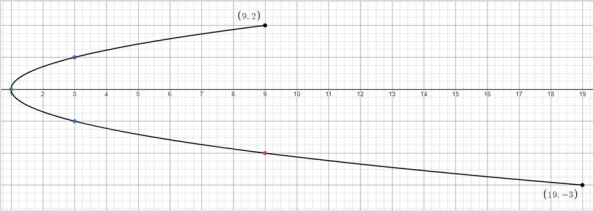
t	-2	-1	0	1	2
x					
y					

5. Complete a table of numerical values and sketch the curve for the parametric function $f(t) = (2t^2 + 1, t)$, $-2 \leq t \leq 2$.



6. What is the domain of the parametric function $f(t) = (\sqrt{t+1}, t^3 + 5)$?

Answers to 4.2 CA #2

1. (10, 3)	2. (8, 7)	3. (e^t, t^2)																																										
4.	<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td>t</td><td>-2</td><td>-1</td><td>0</td><td>1</td><td>2</td><td>-2</td></tr> <tr><td>x</td><td>-1</td><td>-0.5</td><td>0</td><td>0.5</td><td>1</td><td>-1</td></tr> <tr><td>y</td><td>4</td><td>1</td><td>0</td><td>1</td><td>4</td><td>4</td></tr> </table>	t	-2	-1	0	1	2	-2	x	-1	-0.5	0	0.5	1	-1	y	4	1	0	1	4	4	<p>5. Could have different values of t in your table, only start and end matter.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td>t</td><td>-3</td><td>-2</td><td>-1</td><td>0</td><td>1</td><td>2</td></tr> <tr><td>x</td><td>19</td><td>9</td><td>3</td><td>1</td><td>3</td><td>9</td></tr> <tr><td>y</td><td>-3</td><td>-2</td><td>-1</td><td>0</td><td>1</td><td>2</td></tr> </table> <div style="text-align: center; margin-top: 10px;">  </div> <p style="text-align: center;">Limited domain, no arrows on endpoints!</p>	t	-3	-2	-1	0	1	2	x	19	9	3	1	3	9	y	-3	-2	-1	0	1	2
t	-2	-1	0	1	2	-2																																						
x	-1	-0.5	0	0.5	1	-1																																						
y	4	1	0	1	4	4																																						
t	-3	-2	-1	0	1	2																																						
x	19	9	3	1	3	9																																						
y	-3	-2	-1	0	1	2																																						
6. $t \geq -1$																																												