

Worksheet: Graphing Parametric Curves



In this worksheet, we will practice graphing parametric curves.

Q1: Anthony wants to graph the parametric equations $x = 2t - 2$ and $y = 3 - t^2$, where $0 \leq t \leq 2$. He has started to complete a table of values.

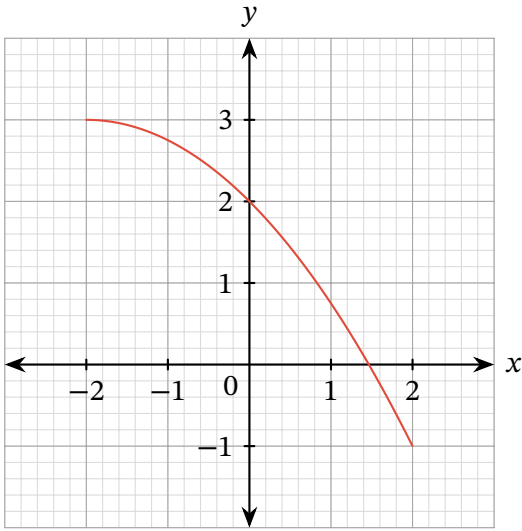
t	0	0.5	1	1.5	2
x	-2	-1	a	1	2
y	3	2.75	b	c	-1



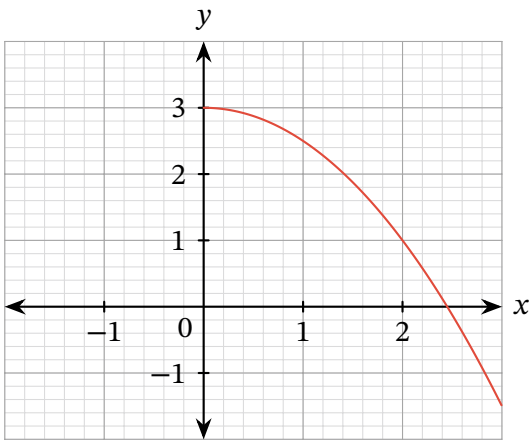
Find the values of a , b , and c .

Use the table of values to determine which of the following graphs is correct.

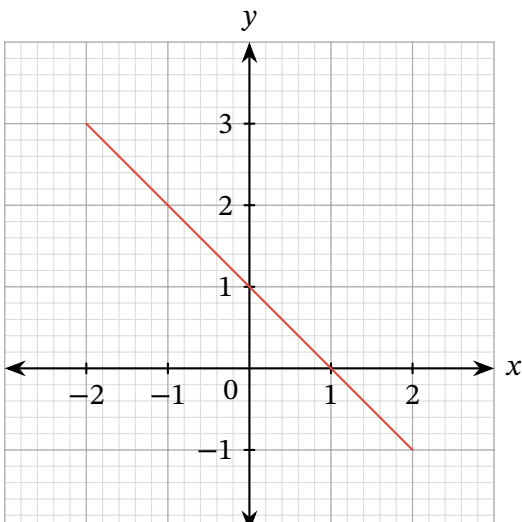
A



B



C



Q2: David wants to graph the parametric equations $x = 2 \cos t$ and $y = -\sin t$, where $0 \leq t \leq \pi$. He has started to complete a table of values.

t	0	$\frac{\pi}{4}$	$\frac{\pi}{2}$	$\frac{3\pi}{4}$	π
x	2	$\sqrt{2}$	a	$-\sqrt{2}$	-2
y	0	$-\frac{\sqrt{2}}{2}$	b	c	0



Work out the values of a , b , and c .



When David plots the coordinates on a graph, he is not entirely sure about the shape of the curve. What is the one thing he could do to find out more about the shape of the curve?

- A David could extend the value of t to be lower than 0.
- B David could extend his table of values; for example, he could increase t by increments of $\frac{\pi}{8}$ rather than $\frac{\pi}{4}$.
- C David could extend the value of t to be greater than π .