PRINTABLE VERSION

Quiz 24 10.3

You scored 0 out of 100

Question 1

You did not answer the question.

Express the curve by an equation in x and y given $x(t) = t^2$ and $y(t) = 2\,t^4 + 4$.

$y = 2\,(t^2)^2 + 4$

a) $x = 4\,y^2 + 5,\ \ y \geq 0$

b) $x = 4\,y^2 + 3,\ \ y \geq 0$

c) $y = 2\,x^2 + 3,\ \ x \geq 0$

$y = 2x^2 + 4$

d) $y = x^2 + 4,\ \ x \geq 0$

e) $y = 2\,x^2 + 4,\ \ x \geq 0$

Question 2

You did not answer the question.

Express the curve by an equation in x and y given $x(t) = \cos(t)$ and $y(t) = 5\ \sin(t)$. $\rightarrow \sin(t) = \frac{y}{5}$

a) $x^2 - 25\,y^2 = 25$

$\cos^2(t) + \sin^2(t) = 1$

b) $25\,x^2 + y^2 = 25$

$x^2 + \left(\frac{y}{5}\right)^2 = 1$

c) $25\,x^2 + y^2 = 5$

d) $x^2 + 25\,y^2 = 25$

e) $25\,x^2 - y^2 = 5$

Question 3

You did not answer the question.

$\sec^2(t) = x - 2$

Express the curve by an equation in x and y given $x(t) = \sec^2(t) + 2$ and $y(t) = 5 + \tan(t)$. $\to \tan(t) = y - 5$

$1 + \tan^2(t) = \sec^2(t)$

$1 + (y-5)^2 = x - 2$

a) $x = (y-5)^2 + 2$

b) $y = (x-5)^2 + 3$

c) $x = (y-5)^2 + 3$

d) $y = (x-5)^2 + 2$

e) $x = (y+5)^2 + 1$

Question 4

You did not answer the question.

? $-1 \le \sin(t) \le 1$

Express the curve by an equation in x and y given $\boxed{x(t) = \sin(t)}$ and $y(t) = 9 + \cos^2(t)$.

$\cos^2(t) = y - 9$

$\cos^2(t) + \sin^2(t) = 1$

$y - 9 + x^2 = 1$

a) $-x^2 + y = 10, \ -9 \le x \le 9$

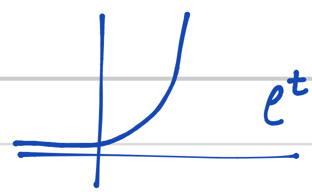
b) $y^2 + x = 10, \ 0 \le x \le 1$

c) $x^2 + y = 9, \ -1 \le x \le 1$

d) $x^2 + y = 10, \ -1 \le x \le 1$

e) $-y^2 + x = 9, \ -9 \le x \le 9$

Question 5



$e^t > 0$ so $x > 0$

You did not answer the question.

Express the curve by an equation in x and y given $x(t) = e^t$ and $y(t) = 5 - e^{3t}$.

$y = 5 - (e^t)^3$

$y = 5 - x^3$

a) $x^3 + y = 5, \ x > 0$

b) $-x^4 + y = 6, \ 0 \le x \le 5$

c) $y^3 + x = 5, \ x > 0$

d) $-x^3 + y = 5, \ x \ge 1$

e) ◯ $-y^3 + x = 5,\ 0 \le x \le 1$

Question 6

You did not answer the question.

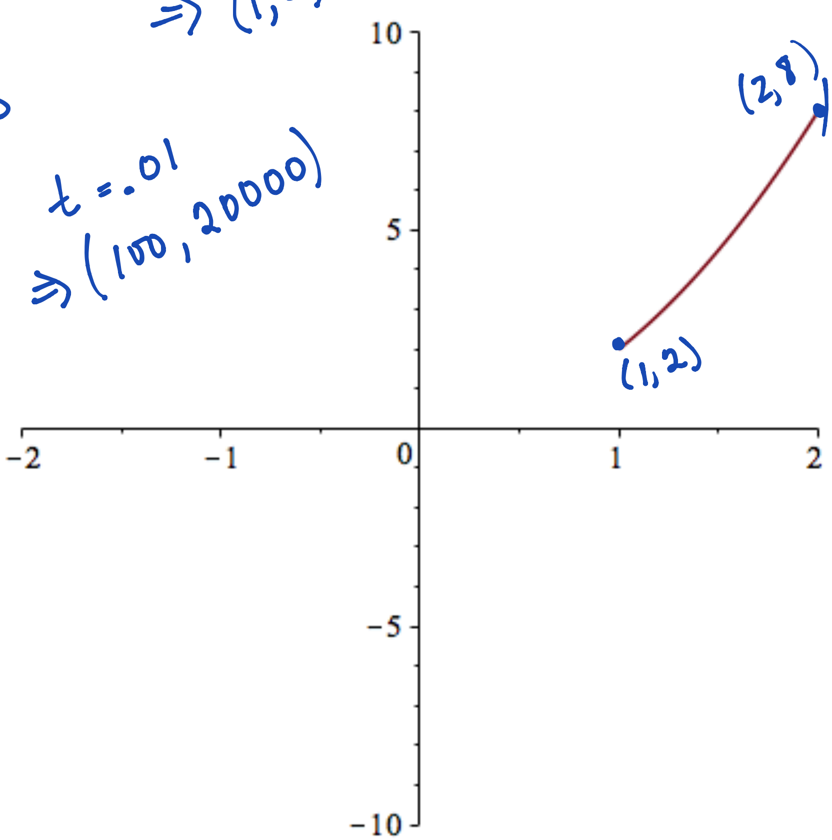
Express the curve by an equation in x and y given $\left(\frac{1}{t}, \frac{2}{t^2}\right)$, $t \in (0, 1]$ and identify the correct sketch of the curve.

$t = 1 \Rightarrow (1, 2)$

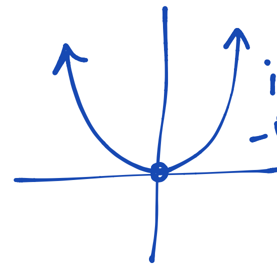
$x(t) = 1/t$ $\quad y(t) = 2/t^2 = 2(1/t)^2$

$t = 1/2$
$x = 2,\ y = 8$

$t = .01 \Rightarrow (100, 20000)$

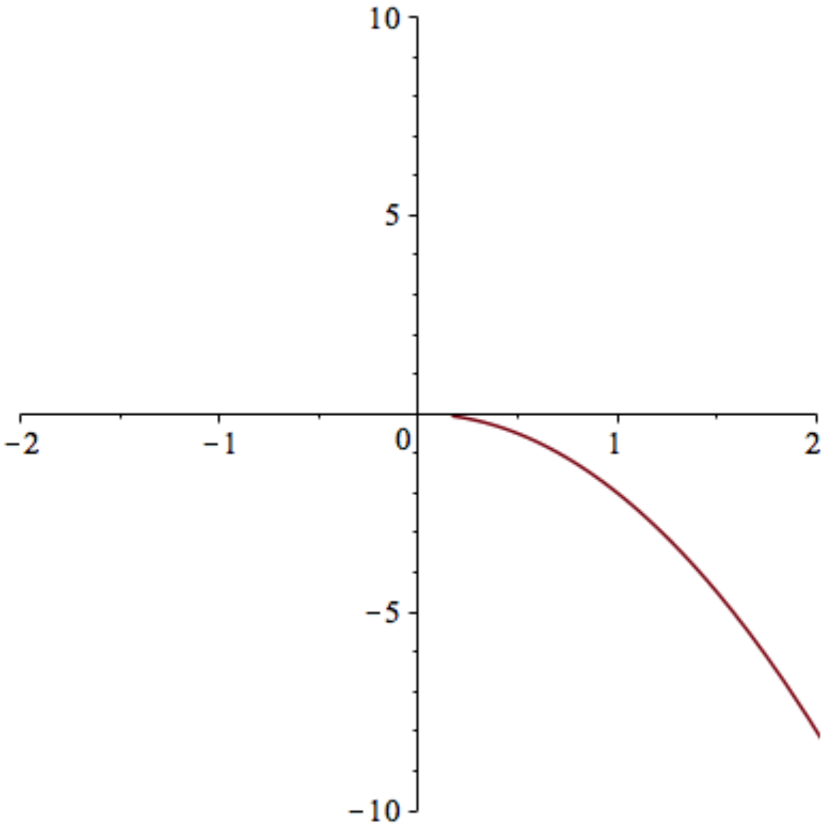


$y = 2x^2$

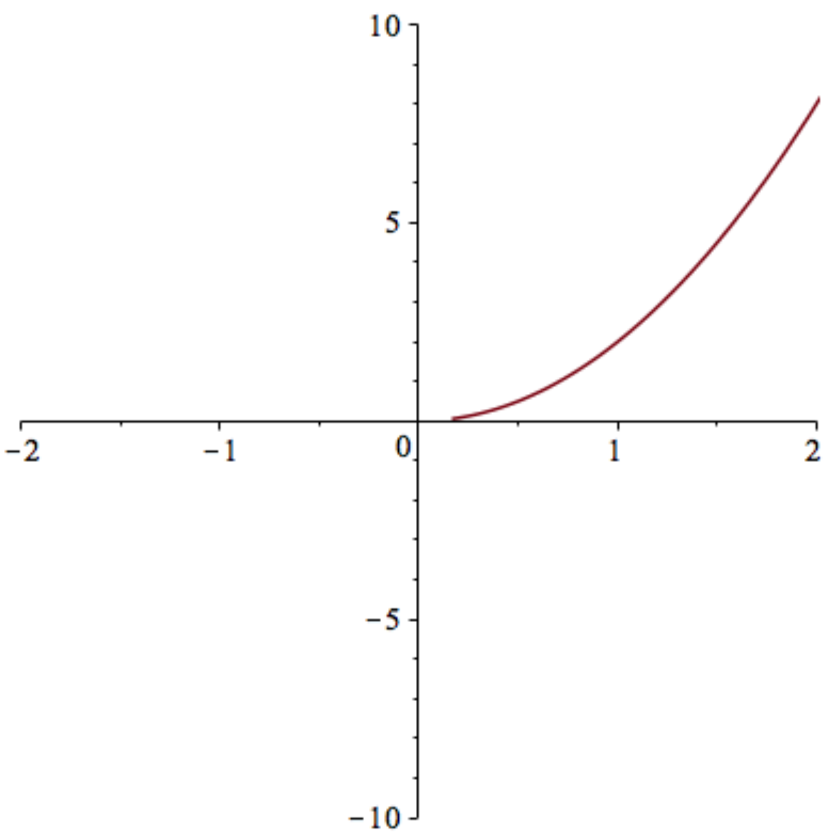


if $-\infty < t < \infty$

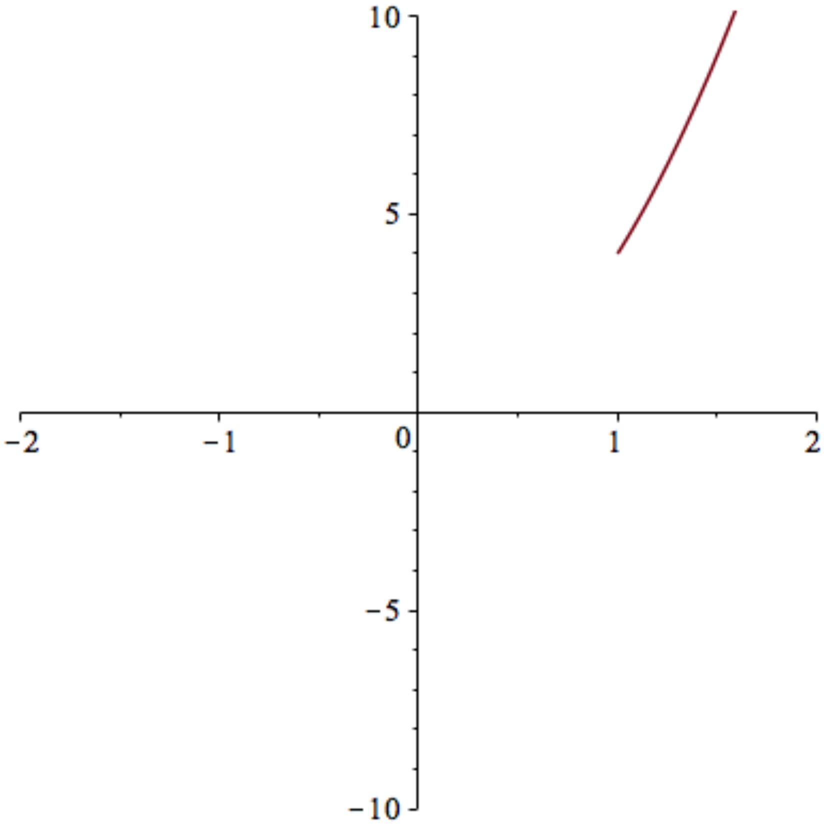
a) ◯ $y = 2x^2$;



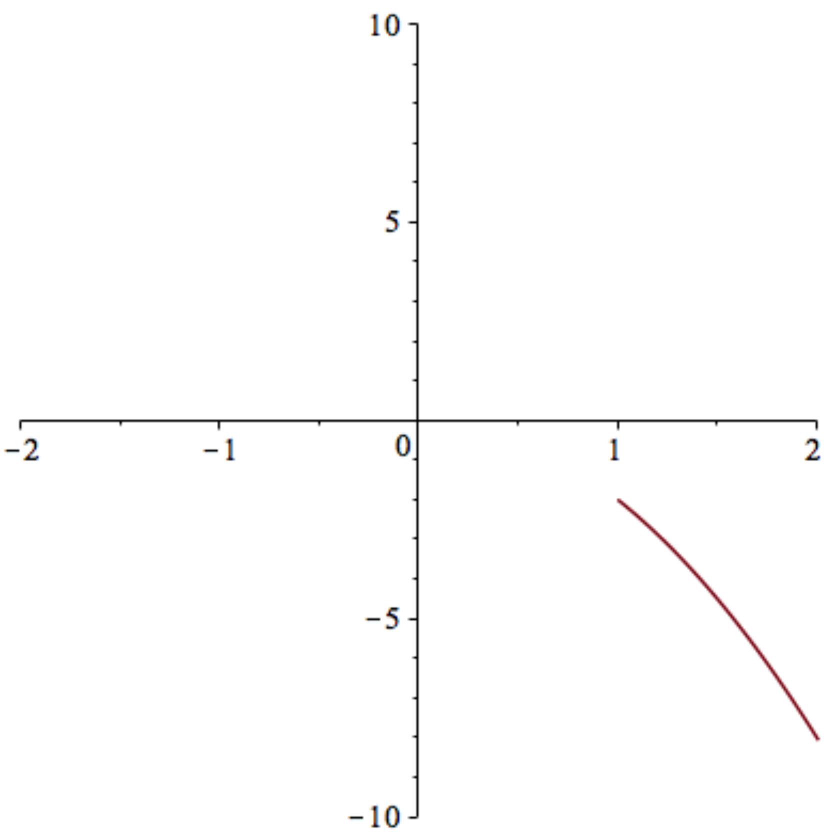
b) $y = 2x^{-2}$;



c) $y = 2x^{-1}$;



d) $y = 2x^2$;



e) $y = -2x^2$;

Question 7

You did not answer the question.

$t=0$ $x=3, y=0$

Give a parameterization for the ellipse $16x^2 + 9y^2 = 144$ that begins at the point (3,0) and traverses once in a counterclockwise manner.

144

a) $x(t) = 4\cos(t),\ y(t) = 3\sin(t),\ t \in [0, 2\pi]$

b) $x(t) = 16\cos(t),\ y(t) = 9\sin(t),\ t \in [0, 2\pi]$

c) $x(t) = 9\sin(t),\ y(t) = 16\cos(t),\ t \in [0, 2\pi]$

d) $x(t) = 3\cos(t),\ y(t) = 4\sin(t),\ t \in [0, 2\pi]$

e) $x(t) = 4\sin(t),\ y(t) = 3\cos(t),\ t \in [0, 2\pi]$

begins at $(0,3)$

$\frac{x^2}{9} + \frac{y^2}{16} = 1$

$(x/3)^2 + (y/4)^2 = 1$

$\cos^2 t + \sin^2 t = 1$

$\cos(t) = x/3$ $\sin(t) = y/4$

$x(t) = 3\cos(t)$ $y(t) = 4\sin(t)$

Question 8

You did not answer the question.

Find a parametrization $x = x(t),\ y = y(t),\ \boxed{t \in [0, 1]}$ for the line segment from $(-8, -2)$ to $(5, 8)$.

$x_0\ y_0\ x_1\ y_1$

a) $x(t) = 13t - 8,\ y(t) = 10t - 2$

b) $x(t) = 13t - 8,\ y(t) = -2 + 11t$

c) $x(t) = -8 - 14t,\ y(t) = 10t - 2$

d) $x(t) = -10t - 8,\ y(t) = -13t - 2$

e) $x(t) = -13t - 8,\ y(t) = -10t - 2$

$x(t) = -8 + t(5 - -8)$

$x(t) = -8 + 13t$

$y(t) = -2 + t(8 - -2)$

$y(t) = -2 + 10t$

Question 9

You did not answer the question.

Find a parametrization $x = x(t),\ y = y(t),\ t \in [0, 1]$ for the line segment from $(-5, -3)$ to $(-7, -3)$.

$x_0 + t(x_1 - x_0)$

a) $x(t) = -5,\ y(t) = 2t - 3$

b) $x(t) = -2t - 5,\ y(t) = -3$

$x(t) = -5 + t(-7 - -5)$

$y(t) = -3 + t(-3 - -3)$

c) $x(t) = 2t - 5,\ \ y(t) = 0$

d) $x(t) = -5 + t,\ \ y(t) = -3$

e) $x(t) = -2t - 5,\ \ y(t) = -3 + t$

Question 10

You did not answer the question.

Find a parametrization $x = x(t),\ \ y = y(t)$ for $f(x) = x^8 - 8x^2 - 9$ from $(9, -10)$ to $(10, -8)$.

if $y = f(x)$

let $x(t) = t$

then $y(t) = f(t)$

a) $x(t) = t^8 - 8t^2 - 9,\ \ y(t) = t,\ \ t \in [9, 10]$

b) $x(t) = t^8 - 8t^2,\ \ y(t) = -9,\ \ t \in [9, 10]$

c) $x(t) = t^2,\ \ y(t) = t^4 - 8t - 9,\ \ t \in [81, 100]$

d) $x(t) = t,\ \ y(t) = t^8 - 8t^2 - 9,\ \ t \in [9, 10]$

e) $x(t) = t^8 - 8t^2 - 9,\ \ y(t) = t,\ \ t \in [-10, -8]$