Parametric Equations Key

1) $x = 1 - 2t \quad y = 1 + t$

$\frac{x-1}{-2} = t$

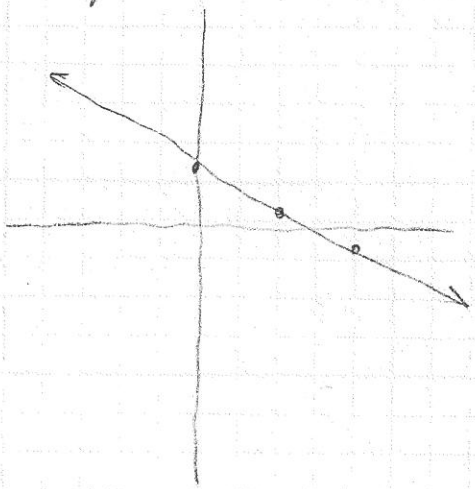
$y = 1 + \frac{-1}{2}(x-1)$

$y = 1 - \frac{1}{2}x + \frac{1}{2}$

$y = -\frac{1}{2}x + \frac{3}{2}$

$t = (-\infty, \infty)$

D: $-\infty$
R: ∞



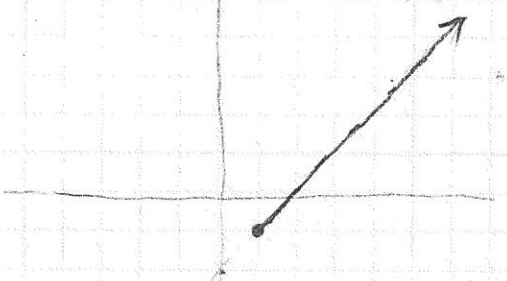
2) $x = t^2 + 1 \quad y = t^2 - 1$

$t = (-\infty, \infty)$
D: $[1, \infty)$
R: $[-1, \infty)$

$t^2 = x - 1$

$y = (x-1) - 1$

$y = x - 2$

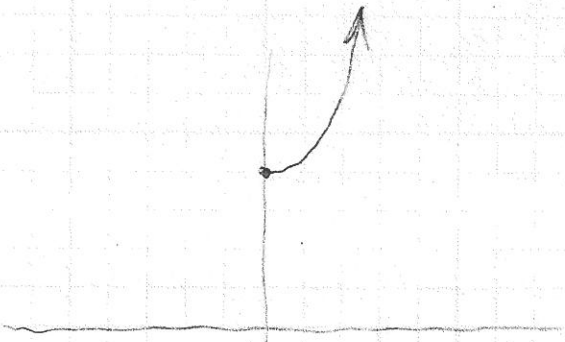


3) $x = \sqrt{t} \quad y = 3t + 4$

$x^2 = t$

$y = 3x^2 + 4$

$t = [0, \infty)$
D: $[0, \infty)$
R: $[4, \infty)$

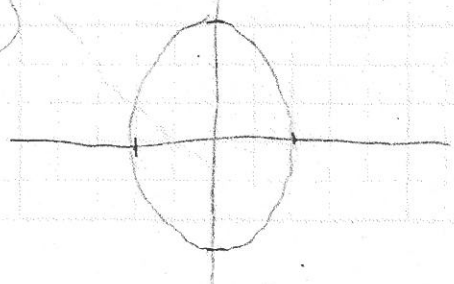


4) $x = 2\sin t \quad y = 3\cos t$

$t = (-\infty, \infty)$
D: $[-2, 2]$
R: $[-3, 3]$

$\left(\frac{x}{2}\right)^2 = (\sin t)^2 \quad \left(\frac{y}{3}\right)^2 = (\cos t)^2$

$\frac{x^2}{4} + \frac{y^2}{9} = 1$



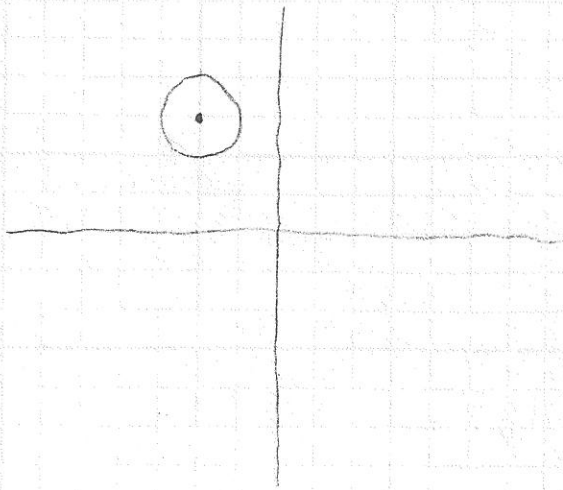
5) $x = \cos t - 2$ $y = \sin t + 3$

$(x+2)^2 = \cos^2 t$ $(y-3)^2 = \sin^2 t$

$t = (-\infty, \infty)$ $(x+2)^2 + (y-3)^2 = 1$

D: $[-3, -1]$

R: $[2, 4]$



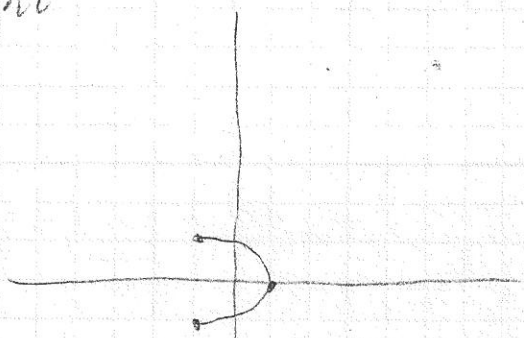
6) $x = \cos 2t$ $y = \sin t$

$y = \sin t$

$t = (-\infty, \infty)$ $x = 1 - 2\sin^2 t$

D: $[-1, 1]$ $x = 1 - 2(y^2$

R: $[-1, 1]$ $x = 1 - 2y^2$

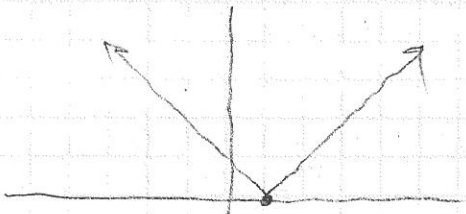


7) $x = t$ $y = \sqrt{(t-1)^2}$

$t = (-\infty, \infty)$

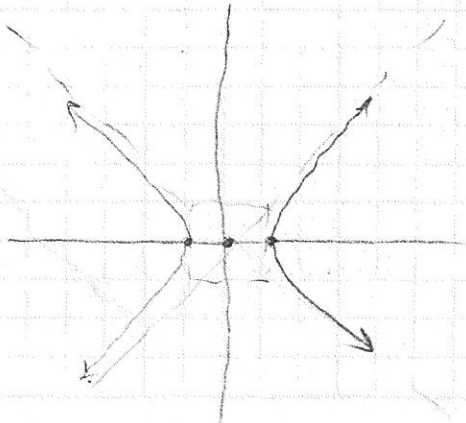
D: $(-\infty, \infty)$

R: $[0, \infty)$



$x = t$ $y = |t - 1|$

$y = |x - 1|$



8) $x = \sec t$ $y = \tan t$

$x^2 = \sec^2 t$ $y^2 = \tan^2 t$

$x^2 = y^2 + 1$ $t \neq \pi k$

$x^2 - y^2 = 1$ D: $(-\infty, -1] [1, \infty)$

R: $(-\infty, \infty)$

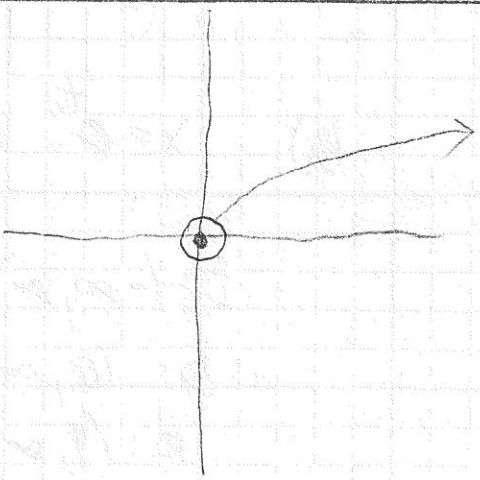
9.) $x = e^{2t}$ $y = e^t$

$x = e^{2t}$ $y^2 = e^{2t}$

$x = y^2$ $t = (-\infty, \infty)$

D: $(0, \infty)$

R: $(0, \infty)$

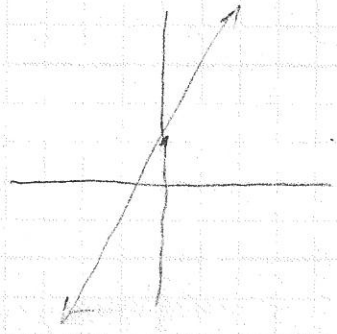


10.) $x = t$ $y = 2t + 1$

$y = 2x + 1$ $t = (-\infty, \infty)$

D: $(-\infty, \infty)$

R: $(-\infty, \infty)$



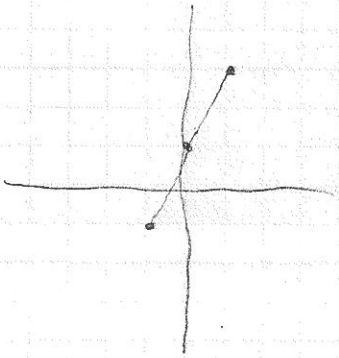
11.) $x = \cos t$ $y = 2\cos t + 1$

$y = 2x + 1$

$t = (-\infty, \infty)$ $y = 2x + 1$

D: $[-1, 1]$

R: $[-1, 3]$



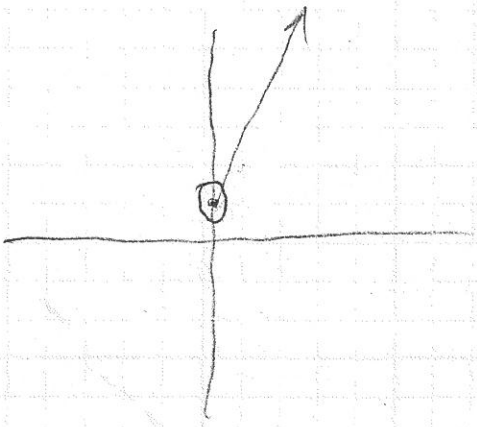
12.) $x = e^{-t}$ $y = 2e^{-t} + 1$

$y = 2x + 1$

$t = (-\infty, \infty)$

D: $(0, \infty)$

R: $(1, \infty)$



13

13.) $x = e^t \quad y = 2e^t + 1$

$y = 2x + 1$

$t: (-\infty, \infty)$

$D: (0, \infty)$

$R: (1, \infty)$