

HOW DOES NASA ORGANIZE A PARTY?

T H E Y P L A N E T
 8 4 5 2 10 1 7 6 9 3

Eliminate the parameters on each to write in rectangular form.

SHOW YOUR WORK!!!

1. $x = 6 \cos t$ $y = 2 \sin t$ (L) $\frac{x^2}{36} + \frac{y^2}{4} = 1$ $x^2 + 9y^2 = 36$	2. $x = 6 \cos t + 1$ $y = \sin t + 5$ (Y) $\frac{(x-1)^2}{36} + \frac{(y-5)^2}{1} = 1$	(N) $\frac{(y-5)^2}{36} - \frac{(x-1)^2}{4} = 1$
3. $x = 2 \sec t + 1$ $y = 6 \tan t + 5$ (T) $\frac{(x-1)^2}{4} - \frac{(y-5)^2}{36} = 1$	4. $x = t - 3$ $y = t^2 + 5$ $(x+3) = t$ $y = (x+3)^2 + 5$ (H)	(E) $\frac{(x-1)^2}{25} + \frac{(y+5)^2}{2} = 1$
5. $x = \sqrt{t} - 5$ $y = 9t + 1$ (E) $\frac{y-1}{9} = t$ $x = \sqrt{\frac{y-1}{9}} - 5$ $3x = \sqrt{y-1} - 5$ $3x + 5 = \sqrt{y-1}$ $(3x+5)^2 = y-1$ $9x^2 + 30x + 25 = y - 1$ $9x^2 + 30x + 26 = y$	6. $x = 2 \tan t + 1$ $y = 6 \sec t + 5$ (N) $\frac{(y-5)^2}{36} - \frac{(x-1)^2}{4} = 1$	(T) $\frac{(x-1)^2}{4} - \frac{(y-5)^2}{36} = 1$
7. $x = 5t$ $y = -\frac{t}{2} - 5$ (A) $\frac{y}{5} = t$ $y = -\frac{2}{5}x - 5$	8. $x = 6 \cos t - 1$ $y = 6 \sin t - 5$ (T) $(x+1)^2 + (y+5)^2 = 36$	(H) $y = (x+3)^2 + 5$ ✓
9. $x = 5 \cos t + 1$ $y = \sqrt{2} \sin t - 5$ (E) $\frac{(x-1)^2}{25} + \frac{(y+5)^2}{2} = 1$	10. $x = 3 \tan t - 5$ $y = 3 \sec t + 1$ (P) $\frac{(y-1)^2}{9} - \frac{(x+5)^2}{9} = 1$	(A) $y = -\frac{1}{10}x - 5$
		(E) $y = 9(x+5)^2 + 1$
		(L) $x^2 + 9y^2 = 36$
		(P) $\frac{(y-1)^2}{9} - \frac{(x+5)^2}{9} = 1$
		(T) $(x+1)^2 + (y+5)^2 = 36$

$$\sec^2 \theta - \tan^2 \theta = 1$$

$$\frac{\cos^2 \theta + \sin^2 \theta}{\cos^2 \theta} = 1$$

$$1 + \tan^2 \theta = \sec^2 \theta$$