

### Worksheet #44: Parametric Equations

Parametric equations have their  $x$  and  $y$ -coordinates defined in terms of another parameter:  $x = f(t)$  &  $y = g(t)$   
They can be converted back into their  $x$  and  $y$ -form by solving for  $t$  (when solving for  $t$  is possible).

Rewrite the following parametric equations to suppress the  $t$ -coordinate and write the functions entirely in terms of  $x$  and  $y$  only.

1. 
$$\begin{aligned}x &= 3t \\ y &= t^2\end{aligned}$$

2. 
$$\begin{aligned}x &= t + 1 \\ y &= 4t^2 + 5\end{aligned}$$

3. 
$$\begin{aligned}x &= e^t \\ y &= t + 3\end{aligned}$$

4. 
$$\begin{aligned}x &= e^{2t} \\ y &= e^t\end{aligned}$$

5. 
$$\begin{aligned}x &= 5 \cos t \\ y &= 5 \sin t\end{aligned}$$