9.6 Parametric Equations

Combination of distances in relation to time

Tight end on wheel Route

Made up of 2 equations

Horizontal	Vertical
$x = 2t$	$y = 6 - 16t^2$

→ Solve and substitute

1. Solve for t in first equation
   $\frac{1}{2}x = t$
2. Substitute for t in second equation
   $y = 6 - 16(\frac{1}{2}x)^2 = 6 - 16(\frac{1}{4}x^2) = 6 - 4x^2$

$x = t + 5$
$-5 \quad -5$
$x - 5 = t$

$y = 3t - 6$
$y = 3(x-5) - 6$
$y = 3x - 15 - 6$
$y = 3x - 21$

Solving for values

$y = 0$

$x = 20t$
$\frac{x}{20} = t$

$y = 5 - 16t^2$
$y = 5 - 16(\frac{x}{20})^2$
$0 = 5 - \frac{16x^2}{400}$
$-5 = -\frac{16x^2}{400}$
$\frac{2000}{16} = \frac{16x^2}{16}$
$125 = x^2 \quad 11.2$