



$(0,0)$  to  $(3,0)$

$$x(t) = 3t \quad y(t) = 0 \quad 0 \leq t \leq 1$$

$$\vec{r}(t) = 3t \vec{i} \quad 0 \leq t \leq 1$$

$(3,0)$  to  $(0,2)$

$$x(t) = -3t + 6 \quad y(t) = 2t - 2 \quad 1 \leq t \leq 2$$

$$\begin{array}{l} at + b = 3 \\ t = 1 \end{array} \quad \begin{array}{l} at + b = 0 \\ t = 2 \end{array}$$

$$\begin{array}{l} at + b = 0 \\ t = 1 \end{array} \quad \begin{array}{l} at + b = 2 \\ t = 2 \end{array}$$

$$\begin{array}{l} a + b = 3 \\ 2a + b = 0 \\ \underline{-a - b = -3} \\ a = -3 \\ b = 6 \end{array}$$

$$\begin{array}{l} a + b = 0 \\ 2a + b = 2 \\ \underline{-a - b = 2} \\ a = 2 \\ b = -2 \end{array}$$

Form:  $at + b$   
 $-3t + 6$

Form:  $at + b$   
 $2t - 2$

$$\vec{r}(t) = (-3t + 6) \vec{i} + (2t - 2) \vec{j} \quad 1 \leq t \leq 2$$

$(0,0)$  to  $(0,0)$   $2 \leq t \leq 3$

$$x(t) = 0$$

$$y(t) = -2t + 6$$

$$\begin{array}{l} at + b = 2 \\ t = 2 \end{array} \quad \begin{array}{l} at + b = 0 \\ t = 3 \end{array}$$

$$\begin{array}{l} 2a + b = 2 \\ 3a + b = 0 \\ \underline{-2a - b = -2} \\ a = -2 \\ b = 6 \end{array}$$

Form:  $at + b$   
 $-2t + 6$

$$\vec{r}(t) = (-2t + 6) \vec{j} \quad 2 \leq t \leq 3$$