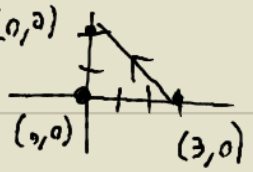
8.



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

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

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

$(3,0)$ to $(0,2)$ $\quad 1 \le t \le 2$

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

$at + b = 3$ $\quad at + b = 0$

$t = 1 \quad t = 2$

$a + b = 3 \quad 2a + b = 0$

$-a - b = -3$

$a = -3$

$b = 6$

Form: $at + b$

$-3t + 6$

$at + b = 0 \quad at + b = 2$

$t = 1 \quad t = 2$

$a + b = 0 \quad 2a + b = 2$

$-a - b = 0$

$a = 2$

$b = -2$

Form: $at + b$

$2t - 2$

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

$(0,2)$ to $(0,0)$ $\quad 2 \le t \le 3$

$x(t) = 0 \quad y(t) = -2t + 6$

$at + b = 2 \quad at + b = 0$

$t = 2 \quad t = 3$

$2a + b = 2 \quad 3a + b = 0$

$-2a - b = -2$

$a = -2$

$b = 6$

Form: $at + b$

$-2t + 6$

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