

**Exercise 27**

Write an equation for a line perpendicular to  $p(t) = 3t + 4$  and passing through the point  $(3, 1)$ .

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**Solution**

A perpendicular line has the negative reciprocal of the slope of the given line:  $-1/3$ . Use the point-slope formula to get the equation of the line through  $(3, 1)$ .

$$y - 1 = -\frac{1}{3}(t - 3)$$

$$y - 1 = -\frac{1}{3}t + 1$$

$$y = -\frac{1}{3}t + 2$$