

9. Given the function  $p(r)=r^2+3r$ , find an equation of the secant line containing  $(3,p(3))$  and  $(4,p(4))$ . Express the equation in slope-intercept form.

$$z = -48 + 10r$$

$$z = 48 - 10r$$

$$z = -12 + 10r$$

$$z = -11 + 11r$$

### Solution

The line passing through the two points has the slope:

$$\begin{aligned} & \frac{p(4)-p(3)}{4-3} \\ &= \frac{(1(4)^2+3(4))-(1(3)^2+3(3))}{1} \\ &= \frac{28-18}{1} \\ &= 10 \end{aligned}$$

using one of the points, say  $(3,18)$  and the slope to get the equation of the secant line:

$$z-18 = 10(r-3)$$

The equation in slope-intercept form:

$$z = -12 + 10r$$