

6. Given the function  $d(s)=2s^2+s$ , find an equation of the secant line containing  $(3,d(3))$  and  $(5,d(5))$ . Express the equation in slope-intercept form.

$$k = -72 + 17s$$

$$k = 72 - 17s$$

$$k = -30 + 17s$$

$$k = -29 + \frac{35s}{2}$$

### Solution

The line passing through the two points has the slope:

$$\begin{aligned} & \frac{d(5)-d(3)}{5-3} \\ &= \frac{(2(5)^2+1(5))-(2(3)^2+1(3))}{2} \\ &= \frac{55-21}{2} \\ &= 17 \end{aligned}$$

using one of the points, say  $(3,21)$  and the slope to get the equation of the secant line:

$$k-21 = 17(s-3)$$

The equation in slope-intercept form:

$$k = -30 + 17s$$