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

$t = -66 + 15s$

$t = 66 - 15s$

$t = -24 + 15s$

$t = -23 + 16s$

Solution

The line passing through the two points has the slope:

$$\frac{j(4)-j(3)}{4-3} = \frac{(2(4)^2+1(4))-(2(3)^2+1(3))}{1} = \frac{36-21}{1} = 15$$

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

$t-21 = 15(s-3)$

The equation in slope-intercep form:

$t = -24 + 15s$