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

$j = -36 + 8g$

$j = 36 - 8g$

$j = -12 + 8g$

$j = -11 + 9g$

Solution

The line passing through the two points has the slope:

$$\frac{w(4)-w(3)}{4-3}$$

$$= \frac{(1(4)^2+1(4))-(1(3)^2+1(3))}{1}$$

$$= \frac{20-12}{1}$$

$$= 8$$

using one of the points, say $(3,12)$ and the slope to get the equation of the secant line:

$j-12 = 8(g-3)$

The equation in slope-intercep form:

$j = -12 + 8g$