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

$k = -78 + 17g$

$k = 78 - 17g$

$k = -24 + 17g$

$k = -23 + 18g$

Solution

The line passing through the two points has the slope:

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

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

$$= \frac{44-27}{1}$$

$$= 17$$

using one of the points, say $(3,27)$ and the slope to get the equation of the secant line:

$k-27 = 17(g-3)$

The equation in slope-intercep form:

$k = -24 + 17g$