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

$t = -78 + 17y$

$t = 78 - 17y$

$t = -24 + 17y$

$t = -23 + 18y$

Solution

The line passing through the two points has the slope:

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

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

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

$$= 17$$

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

$t-27 = 17(y-3)$

The equation in slope-intercep form:

$t = -24 + 17y$