2. Given the function $c(a)=2a^2+4a$,
find an equation of the secant line containing $(1,c(1))$
and $(4,c(4))$. Express the equation in slope-intercept form.

$s = -20 + 14a$

$s = 20 - 14a$

$s = -8 + 14a$

$s = -7 + \frac{43a}{3}$

Solution

The line passing through the two points has the slope:

$$\frac{c(4)-c(1)}{4-1}$$

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

$$= \frac{48-6}{3}$$

$$= 14$$

using one of the points, say $(1,6)$ and the slope to get the equation of the secant line:

$s-6 = 14(a-1)$

The equation in slope-intercep form:

$s = -8 + 14a$