7. Given the function $a(s) = s^2 + 4s$,
find an equation of the secant line containing $(2, a(2))$
and $(6, a(6))$. Express the equation in slope-intercept form.

$n = -36 + 12s$

$n = 36 - 12s$

$n = -12 + 12s$

$n = -11 + \frac{49s}{4}$

Solution

The line passing through the two points has the slope:

$\frac{a(6) - a(2)}{6 - 2}$

$= \frac{(1(6)^2 + 4(6)) - (1(2)^2 + 4(2))}{4}$

$= \frac{60 - 12}{4}$

$= 12$

using one of the points, say $(2, 12)$ and the slope to get the equation of the secant line:

$n - 12 = 12(s - 2)$

The equation in slope-intercep form:

$n = -12 + 12s$