

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

$$z = -24 + 9c$$

$$z = 24 - 9c$$

$$z = -12 + 9c$$

$$z = -11 + \frac{37c}{4}$$

Solution

The line passing through the two points has the slope:

$$\begin{aligned} & \frac{a(6)-a(2)}{6-2} \\ &= \frac{(1(6)^2+1(6))-(1(2)^2+1(2))}{4} \\ &= \frac{42-6}{4} \\ &= 9 \end{aligned}$$

using one of the points, say $(2,6)$ and the slope to get the equation of the secant line:

$$z-6 = 9(c-2)$$

The equation in slope-intercept form:

$$z = -12 + 9c$$