

# ACSL Preparation: Recursion

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ACSL Problem Set: Recursion

Problem 1. Find  $j(15)$ . Given:

$$j(x) = \begin{cases} 2[j(x-3) + 2] & \text{if } x \geq 10 \\ j(x-2) + 3 & \text{if } 8 \leq x < 10 \\ x & \text{if } x < 8 \end{cases}$$

Should be a straightforward problem. Just recurse through the cases.

$$j(15) \rightarrow 2[j(12) + 2] =$$

$$j(12) \rightarrow 2[j(9) + 2] =$$

$$j(9) \rightarrow j(7) + 3 =$$

$$j(7) = 7$$

Derive to bottom case and work back up

$$j(9) = 10$$

$$j(12) = 24$$

$$j(15) = 52$$

$$52$$