

College Algebra, Section 8.3, #8
Sequences and Discrete Functions

Skills Check Find the 40th term of the arithmetic sequence with first term 5 and common difference 15.
¹

If a_1 is the first term of an arithmetic sequence and d is the common difference, then the formula for finding the n th term of the sequence is $a_n = a_1 + (n - 1)d$.

We have been given $a_1 = 5$ and $d = 15$. We're asked to find $n = 40$.

$$\begin{aligned} a_n &= a_1 + (n - 1)d \\ a_{40} &= 5 + (40 - 1) \cdot 15 \\ &= 5 + 39 \cdot 15 \\ &= 590 \end{aligned}$$

The 40th term of this sequence is 590.

¹Harshbarger/Yocco, *College Algebra In Context*, 5e, p. 617 #8.