

# Quiz #1

Find the specified term.

1. The  $101^{th}$  term of the arithmetic sequence if  $a_1 = -5$  and  $d = -4$ .
2. The  $39^{th}$  term of the arithmetic sequence if  $a_1 = 40$  and  $d = \frac{1}{2}$ .
3. In the sequence 6, 10, 14,..., what term has a value of 286?
4. The  $1^{st}$  term of the sequence if  $a_5 = 26$  and  $a_{12} = 47$ .
5. The  $61^{th}$  term of the sequence if  $a_{12} = 8$  and  $a_{21} = 26$ .

# Quiz #1

1.  $a_1 = -5, d = -4,$   
 $n = 101, a_{101} = ?$   
 $a_n = a_1 + (n - 1)d$   
 $a_{101} = -5 + (101 - 1)(-4)$   
 $a_{101} = -405$

2.  $a_1 = 40, d = \frac{1}{2},$   
 $n = 39, a_{39} = ?$   
 $a_n = a_1 + (n - 1)d$   
 $a_{39} = 40 + (39 - 1) \left( \frac{1}{2} \right)$   
 $a_{39} = 59$

3.  $a_1 = 6, d = 10 - 6 = 4,$   
 $n = ?, a_n = 286$

$$\begin{aligned} a_n &= a_1 + (n - 1)d \\ 286 &= 6 + (n - 1)(4) \\ 286 &= 6 + 4n - 4 \\ 286 &= 4n + 2 \\ 286 - 2 &= 4n \\ \frac{284}{4} &= \frac{4n}{4} \\ n &= 71 \end{aligned}$$

4.  $a_5 = 26, a_{12} = 47,$   
 $d = ?, a_1 = ?$   
 $d = \frac{a_n - a_k}{n - k}$   
 $d = \frac{a_{12} - a_5}{12 - 5}$

$$d = \frac{47 - 26}{7}$$

$$d = \frac{21}{7}$$

$$d = 3$$

$$a_n = a_1 + (n - 1)d$$

$$a_5 = a_1 + (5 - 1)(3)$$

$$26 = a_1 + 12$$

$$26 - 12 = a_1$$

$$a_1 = 14$$

5.  $a_{12} = 8, a_{21} = 26,$   
 $n = 61, d = ?, a_{61} = ?$

$$d = \frac{a_n - a_k}{n - k}$$

$$d = \frac{a_{21} - a_{12}}{21 - 12}$$

$$d = \frac{26 - 8}{9}$$

$$d = \frac{18}{9}$$

$$d = 2$$

$$a_n = a_1 + (n - 1)d$$

$$a_{12} = a_1 + (12 - 1)(2)$$

$$8 = a_1 + 22$$

$$8 - 22 = a_1$$

$$a_1 = -14$$

$$a_n = a_1 + (n - 1)d$$

$$a_{61} = -14 + (61 - 1)(2)$$

$$a_{61} = 106$$