Arithmetic Sequences Practice Worksheet – Answer Key

1. 1. Find the next two terms in each sequence:

* a) Common difference: +3 → Next terms: 14, 17
* b) Common difference: -5 → Next terms: 10, 5

1. 2. Identify the first term (a) and the common difference (d):

* a) a = 4, d = 6
* b) a = 100, d = -10

1. 3. Write a formula for the nth term (tn) and find the 10th term:

* a) tn = 3n → t10 = 30
* b) tn = 20 - 3(n - 1) → t10 = -7

1. 4. Solve: How many terms are in this arithmetic sequence?

* Use tn = a + (n - 1)d
* 55 = 7 + (n - 1)×4 → n = 13

1. 5. The 4th term of a sequence is 22 and the 9th term is 42.

* t4 = a + 3d = 22
* t9 = a + 8d = 42
* Subtracting → 5d = 20 → d = 4
* a = 22 - 3×4 = 10
* Formula: tn = 10 + (n - 1)×4

1. 6. In an arithmetic sequence, the 7th term is 75 and the 12th term is 105.

* t7 = a + 6d = 75
* t12 = a + 11d = 105
* Subtracting → 5d = 30 → d = 6
* a = 75 - 6×6 = 39
* a) First term: 39
* b) t20 = 39 + 19×6 = 153
* c) 180 = 39 + (n - 1)×6 → n = 24.5 → 180 is not in the sequence