

MATH1050 Answers to Examples: Arithmetic progressions and geometric progressions.

1. —
2. (a)  $(-a + b)c = ab$ .  
(b)  $a = b = 0$ .  
(c)  $c = \frac{ab}{b - a}$ .
3.  $(a = 1/2 \text{ and } b = 1/8) \text{ or } (a = 1/8 \text{ and } b = 1/2)$ .
4. (a)  $a_0 = -\frac{32}{3}$ .  
(b)  $a_n = \frac{3^{n-1}(-1)^{n-1}}{2^{n-5}}$ .
5. (a)  $a = -\frac{4}{3}$ .  
(b)  $b = -\frac{32}{3}$ .
6.  $M = 1, N = 3$ .
7.  $a_n = 5n - 9$  or  $a_n = -5n + 11$ .
8. (a) —  
(b)  $a = b = c = 2$  or  $(a = 8 \text{ and } b = 2 \text{ and } c = -4)$ .
9. (a) —  
(b)  $a = b = c = 2$  or  $(a = 8 \text{ and } b = 2 \text{ and } c = -4)$ .
10. —
11. —
12. —
13. —
14. —
15. —
16. (a)  $A = 1, B = 3$ .  
(b) i.  $d = 2a_1$ .  
ii. 3.
17. (a)  $A = 1, B = 1, C = 2, D = 2$ .  
(b)  $E = 2, F = 2, G = 2, H = 1, J = 1, K = 2$ .