

Determining the number of terms
in an arithmetic sequence.

$$\{4, 0, -4, -8, \dots, -112\}$$

$$t_n = t_1 + d(n-1)$$

$$t_n = 4 - 4(n-1)$$

$$= 4 - 4n + 4$$

$$t_n = -4n + 8$$

general
equation for all terms

Solve for n , where $t_n = -112$

$$-112 = -4n + 8$$

$$-120 = -4n$$

$$30 = n$$

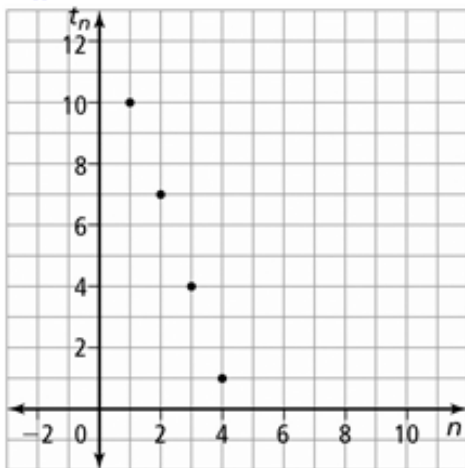
$t_{30} = -112$
or
30 terms in
the sequence

1.1 Extra Practice

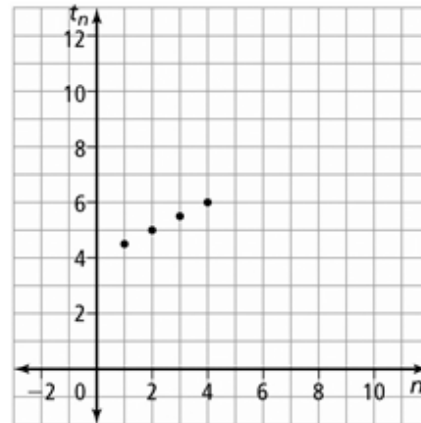
1. , 2a, 3a, 4, 5, 7, 9, 10

BLM 1-4 Section 1.1 Extra Practice

- 1. a) arithmetic; $t_1 = 4, d = 3; 16, 19, 22$
- b) arithmetic; $t_1 = 12, d = -5; -8, -13, -18$
- c) not arithmetic d) not arithmetic
- e) arithmetic; $t_1 = x, d = 2; x + 8, x + 10, x + 12$
- 2. a) $-5, -7, -9, -11$ b) $10, 9.5, 9, 8.5$
- c) $3, 3 + x, 3 + 2x, 3 + 3x$ d) $\frac{7}{3}, \frac{8}{3}, \frac{9}{3}, \frac{10}{3}$
- 3. a) $10, 7, 4, 1$



b) $4\frac{1}{2}, 5, 5\frac{1}{2}, 6$



4. a) $t_n = 4n + 2; t_{50} = 202$ b) $t_n = \frac{7}{2} - \frac{1}{2}n;$
 $t_{50} = -21\frac{1}{2}$

5. a) 77 b) 26

6. a) 4, 8, 12, 16 b) 10, 8, 6, 4, 2

c) 20, 14, 8, 2, -4, -10

7. $t_1 = 12, t_n = 5n + 7, t_{40} = 207$

8. a) $t_1 = -15, d = 4, t_n = 4n - 19$

b) $t_1 = 93, d = -3, t_n = 96 - 3n$

9. $x = \frac{10}{3}; \frac{25}{3}, 8, \frac{23}{3}$

10. a) 15, 18 b) $t_n = 3n + 3$

c) 63 asterisks d) 41st diagram