Solutions for:

Extra Practice with Patterns

1. Find the missing term(s) for each sequence.

a. 30, 36, 43.2, 51.84 (×1.2, ×1.2)

b. 1, 8, 27, 64, 125 (1^3, 2^3, 3^3, 4^3, 5^3)

c. 60, 62.75, 65.5, 68.25, 71 $\frac{60+71}{2} = 65.5$ $\frac{65.5+60}{2} = 62.75$

Now we know the common difference is 2.75 from 62.75 − 60, so to find the last missing term take 65.5 + 2.75 = 68.25

2. Find the 35th term in each sequence.

a. 8, 14, 20, 26, ... 212 $= 8+6(34)$ (+6, +6, +6)

b. 2, 6, 18, 54, ... 3.3×10^{16} $= 2 \cdot (3)^{34}$ (×3, ×3, ×3)

c. 100, 90, 81, 72.9, ... (list your answer to the nearest hundredth) $2.78 = 100(0.9)^{34}$ (×0.9, ×0.9, ×0.9)

3. Write the equation for the *n th* term in each sequence.

a. 15, 19, 23, 27, ... $15 + 4(n-1)$ or $4n+11$

b. 8, 40, 200, ... $8 \cdot 5^{n-1}$ (×5, ×5)

c. 15, 12.5, 10, 7.5, ... $15 - 2.5(n-1)$ or $17.5 - 2.5n$ (−2.5, −2.5, −2.5)

4. Describe a "real life relationship" that describes the following table:

1	2	3	4	5
4	8	12	16	20

The top row is the # of cats or dogs & the bottom row is the # of legs these animals