SM1 Name_____

12.2 Explicit Formulas

Due Date_____ Period____

Find the common difference and initial term for the following arithmetic sequences. Then circle the correct explicit formula.

1) –19, –27, –35, –43, ...

Common Difference (d): _____

Initial Term: _____

A) $a_n = -17 - 8n$ B) $a_n = -15 - 10n$

C) $a_n = -19 - 8n$ D) $a_n = -11 - 8n$

2) 12, 19, 26, 33, ...

Common Difference (d): _____

Initial Term: _____

A) $a_n = 12 + 5n$ B) $a_n = 11 + 6n$

C) $a_n = 7 + 5n$ D) $a_n = 5 + 7n$

Find the common ratio for the following geometric sequences. Then circle the correct explicit formula. Remember to find the ratio (so the fraction or decimal you multiply by if needed).

3) –4, –12, –36, –108, ...

Common Ratio (r): _____

Initial Term: _____

A) $a_n = 4 \cdot (-3)^n$

B) $a_n = -4 \cdot 3^n$

C) $a_n = -\frac{7}{3} \cdot (-3)^n$

D) $a_n = -\frac{4}{3} \cdot 3^n$

4) 4, 16, 64, 256, ...

Common Ratio (r): _____

Initial Term: _____

A) $a_n = 4 \cdot \left(\frac{1}{4}\right)^n$ B) $a_n = 11 \cdot 4^n$

C) $a_n = 11 \cdot \left(\frac{1}{4}\right)^n$ D) $a_n = 4 \cdot 4^n$

State if the sequence is arithmetic or geometric. Find the common difference/ratio and initial term for the following sequences. Then write the explicit formula for each.

5) –27, 3, 33, 63, ...

Geometric/Arithmetic: _____

Ratio(r)/Difference(d): _____

Initial Term: _____

Explicit Formula: _____

6) 34, 29, 24, 19, ...

Geometric/Arithmetic: _____

Ratio(r)/Difference(d): _____

Initial Term: _____

Explicit Formula: _____

7) –24, –28, –32, –36, ...

Geometric/Arithmetic: _____

Ratio(r)/Difference(d): _____

Initial Term: _____

Explicit Formula: _____

8) 3, –15, 75, –375, ...

Geometric/Arithmetic: _____

Ratio(r)/Difference(d): _____

Initial Term: _____

Explicit Formula: _____

9) –2, 6, –18, 54, ...

Geometric/Arithmetic: _____

Ratio(r)/Difference(d): _____

Initial Term: _____

Explicit Formula: _____

10) 2, –8, 32, –128, ...

Geometric/Arithmetic: _____

Ratio(r)/Difference(d): _____

Initial Term: _____

Explicit Formula: _____

11) 1, 6, 36, 216, ...

Geometric/Arithmetic: _____

Ratio(r)/Difference(d): _____

Initial Term: _____

Explicit Formula: _____

12) 35, 41, 47, 53, ...

Geometric/Arithmetic: _____

Ratio(r)/Difference(d): _____

Initial Term: _____

Explicit Formula: _____