Name _____ Date _____

Variable Expressions and Sequences - Matching Worksheet

Match the word problems to their answers. Write the letter of the answer that matches the problem.

_____ 1. Find the first four terms of the sequence defined below, where n represents the position of a term in the sequence. Start with n = 1.
$4(2)^n$

_____ 2. The formula for the n^{th} term of a geometric sequence is
$a_n = a_1 r^{n-1}$
where a_n is the n^{th} term, a_1 is the first term, r is the common ratio, and n is the position of a term in the sequence 7, 35, 175, 875, 4375 …. Solve for a1, r, and express the full formula, including constants.

_____ 3. The formula for the n^{th} term of a geometric sequence is
$a_n = a_1 r^{n-1}$
where a_n is the n^{th} term, a_1 is the first term, r is the common ratio, and n is the position of a term in the sequence 6, 24, 96, 384, 1536 …. Solve for a1, r, and express the full formula, including constants.

_____ 4. Find the first three terms of the sequence defined below, where n represents the position of a term in the sequence. Start with n = 4.
$2(2)^n$

_____ 5. Find the first six terms of the sequence defined below, where n represents the position of a term in the sequence. Start with n = 2.
$3(2)^n$

a. 12, 24, 48, 96, 192, 384

b. $a_n = 6(4)^{n-1}$

c. $a_n = 7(5)^{n-1}$

d. 8, 16, 32, 64

e. 32, 64, 128