Bellwork Friday, June 6, 2014

1. Find the missing terms in this Geomtric Sequence.

1.5, __6__, __24__, __96__, __384__, __1536__, __6144__, 24576

$$\frac{1.5 \times r^7}{1.5} = \frac{24576}{1.5}$$

$$r^7 = 16384$$

$$r = \sqrt[7]{16384} = 4$$

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2. Find the first term given the following two terms of an Arithmetic Sequence.

$a_{24} = 80$ $a_{35} = 113$

$$a_n = a_1 + (n-1)d$$
$$a_n = a_1 + (n-1)3$$
$$80 = a_1 + (24-1)3$$
$$a_n \rightarrow a_{24}$$
$$\boxed{a_1 = 11}$$

$$d = \frac{113 - 80}{11}$$
$$d = 3$$

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3. Find the sum of this Arithmetic Series.

18 + 22 + 26 + 30 +... + 82

$$S_n = \frac{n}{2}(18 + 82)$$
$$\frac{17}{2}(18 + 82)$$
$$a_n = a_1 + (n-1)4$$
$$82 = 18 + (n-1)4 \qquad \boxed{850}$$
$$n = 17$$

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4. Find the sum of this Arithmetic Series.

-5 + -11 + -17 + -23 + ... + -119

$$S_n = \frac{2?}{2}(-5 + -119) = -1240$$

$$-119 = -5 + (n-1)(-6)$$
$$n = 26$$