C11 - 1.3 - Geometric Sequence Means WS

Find the missing terms of the sequence.

2, 4, 8, _____, _____, _____

1, 2, 4, _____, _____, _____

5, 20, 80, _____, _____, _____

-4, 2, -1, _____, _____, _____

9, 3, 1, _____, _____, _____

10, 100, 1000, _____, _____, _____

4, 6, 9, _____, _____, _____

-4, -2, -1, _____, _____, _____

.5, .25, .125, _____, _____, _____

$\frac{2}{7}$, $\frac{12}{35}$, $\frac{72}{175}$, _____, _____, _____

6, -1, $\frac{1}{6}$, _____, _____, _____

$\frac{1}{3}$, $\frac{2}{9}$, $\frac{4}{27}$, _____, _____, _____

$\frac{1}{2}$, $\frac{3}{2}$, $\frac{9}{2}$, _____, _____, _____

x, x^2, x^3, _____, _____, _____

_____, _____, _____, 27, 81, 243,

_____, _____, _____, 625, 3125

_____, _____, _____, -1, $\frac{1}{5}$, $-\frac{1}{25}$,

4, _____ $\frac{1}{16}$, _____, _____,

5, _____ _____, _____,

2, _____ 32, _____, _____,

5, _____, _____, 40, 80, 160,

2, _____, _____, 16, _____, _____,

1, _____, _____, $-\frac{1}{8}$, $\frac{1}{16}$, $-\frac{1}{32}$,

$x+1$, _____, _____, $(x+1)^4$, _____,

3, _____, _____, , _____, 243

Solve for x, and missing terms

$x-2$, $2x+2$, $8x+8$, _____,

3,12,48 $x=5$

C11 - 1.3 - Geometric Means HW

Write the first terms 5 of the sequence

$t_1 = 2, r = 3$

$t_1 = 4, r = -3$

$t_1 = -4, r = \frac{1}{2}$

$t_1 = 4, t_3 = 16$

$t_1 = 5, t_3 = 20$

$t_1 = 2, t_4 = -54$

$t_1 = 1, t_4 = \frac{1}{8}$

$t_1 = 3, t_5 = 243$

$t_1 = x - 1, t_3 = 4x - 4$

C11 - 1.3 - Geometric Means HW

Find t_1 *and* r

$t_2 = 2, t_3 = 4$

$t_2 = 10, t_3 = 20$

$t_2 = 2, t_4 = 96$

$t_2 = 8, t_4 = 32$

$t_2 = 2, t_5 = -16$

$t_2 = 2, t_6 = 32$

$t_3 = 4, t_{10} = 512$

$t_3 = -3, t_{12} = -59049$

C11 - 1.3 - Geometric Sequence $find\ t_1, r$ WS

Find the first term t_1, and the common ratio twice.

$2, 4, 8, . .$

$t_1 = 2$

$r = \frac{4}{2} = 2$

$r = \frac{8}{4} = 2$

$3, 9, 27, \ldots$

$t_1 =$

$r =$

$r =$

$5, 25, 125, \ldots$

$8, -4, 2, \ldots$

$-6, -36, -216$

$5, 10, 20, \ldots$

$2, \frac{1}{2}, \frac{1}{8}, \ldots$

$-27, -3, -\frac{1}{3}, \ldots$

$27, 3, \frac{1}{3},$

$1, -1, 1, \ldots$

$-10, 100, -1000, \ldots$

$0.3, 0.03, 0.003, \ldots$

C11 - 1.3 - Geometric General Term, nth term WS

Find the General Term

$2, 4, 8, \ldots$

$t_1 =$ $r =$

$r =$

$t_n = t_1 r^{n-1}$

Find the 12th term. $t_{12} =?$

Find out what term 128 is. $t_n = 128$.

Find the General Term

$2, 6, 18, . .$

Find the 6th term. $t_6 =?$

Find out what term 162 is. $t_n = 162$.

Find the General Term

$8, -2, \frac{1}{2}, \ldots$

Find the 8th term. $t_8 =?$

Find out what term $\frac{1}{128}$ is. $t_n = -\frac{1}{128}$.

Find the General Term

$0.3, 0.03, 0.003, \ldots$

Find the 5th term. $t_5 =?$

Find out what term 0.00000003 is.

C11 - 1.3 - Geometric Sequences WS

$\times 3$ $\times 3$

$2, \quad 6, \quad 18, \ldots \quad ?, \ldots \quad ?$

$t_1 \quad t_2 \quad t_3 \quad t_6 \quad t_n$

$n = 1 \quad n = 2 \quad n = 3 \quad n = n$

$t_1 = first\ term$
$r = common\ ratio$
$t_n = term\ n$
$n = number\ of\ terms$

$t_1 = 2$

$r = \frac{t_n}{t_{n-1}}$ $\quad r = \frac{t_n}{t_{n-1}}$ $\quad \boxed{r = \frac{t_n}{t_{n-1}}}$ *A term divided by the term before it*

$r =$ $\quad r =$

Geometric: r must always be the same

Find the General term $t_n =?$

$t_n = t_1 r^{n-1}$ $\quad \boxed{t_n = t_1 r^{n-1}}$ General term formula

What is the fifth term t_5*?* $t_5 =?, n = 5$.

$t_n =$

Check your answer: 2,6,18,
Remember: You could have also multiplied the common ratio 2 times to t_3

3. *The number* 1458 *is what term?* $t_n = 1458, n =?$

$t_n = t_1 r^{n-1}$

C11 - 1.3 - Geometric find 'n' WS

Find "n" the number of terms

$2, 4, 8, \ldots . . 256 \rightarrow t_n$

$t_n = t_1 r^{n-1}$

$3, 9, 27, \ldots \ldots . . 729$

$4, 8, 16, \ldots \ldots 2048$

$8, -4, 2, \ldots \ldots . . \frac{1}{256}$

$-6, -36, -216 \ldots \ldots \ldots -46656$

$5, 10, 20, \ldots \ldots \ldots 160$

$2, \frac{1}{2}, \frac{1}{8}, \ldots \ldots \ldots \frac{1}{512}$

$9, -3, 1, \ldots \ldots \frac{1}{81}$

$27, 3, \frac{1}{3}, \ldots \ldots . . \frac{1}{2187}$

$1, 2, 4, \ldots \ldots 65536$

$10, 100, 1000, \ldots \ldots 1000000$

$0.3, 0.03, 0.003, \ldots 0.00000000003$