

## The Galaxy Quest Chomper Sequence

Name ANSWERS



In the movie, Galaxy Quest, Jason Nesmith (Tim Allen) and Gwen DeMarco (Sigourney Weaver) must traverse a series of pounding metal crushers in their path. A young fan of their TV series sends them the sequence for the chompers.

The sequence sent is 2, 2, 4, 2, 2, 4, 2, 2, 3, ..... and the transmission becomes garbled.

1. What do you think could be the next three entries in this sequence? 2, 2, 3

Explain your answer. **This answer assumes that the sequence will continue the pattern that appears to be developing. There is no guarantee that this will be true as no further information is given.**

**Assume that each of the following sequences of letters is following a certain pattern. Fill in the blank with the next entry in the sequence.**

2. a, a, b, b, c, c, d, d, e

3. c, a, d, a, e, a, f, a, g

4. a, z, a, y, b, z, b, y, c, z

5. a, b, c, c, d, e, f, f, g, h

6. d, d, f, f, h, h, j, j, l

7. c, d, d, e, e, e, f, f, f, f

8. a, b, d, e, h, i, m, n, s

9. e, f, g, h, j, k, l, n, o, q

10. a, g, b, h, c, i

11. k, s, j, t, i, u, h, v

## Answers are the same for both calculators used.

Using the Graphing Calculator (in Func mode) indicate the designated entries for each sequence.

**Example:** List the terms of a sequence given an expression/formula such as:  $a_n = 3n + 4$

Use 2<sup>nd</sup> STAT (LIST) → OPS #5 seq(

Type formula, variable, first value for the variable, last value for the variable, and increment

```
NAMES [0] MATH
1:SortA(
2:SortD(
3:dim(
4:Fill(
5:seq(
6:cumSum(
7:↓List(
```

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seq(3X+4,X,1,10,
1)
{7 10 13 16 19 ...
```

Notice that the variable may be entered as X instead of N. If you wish to use N, use your alpha key to enter N.

12. List the first 7 terms of:  $a_n = 4n^2 + 1$  {5, 17, 37, 65, 101, 145, 197}

13. List the first 10 terms of:  $a_n = \left(\frac{1}{2^n}\right)$

{.5, .25, .125, .0625, .03125, .015625, .0078125, .00390625, .001953125, .0009765625}

14. List the 4<sup>th</sup> through the 12<sup>th</sup> terms of:  $a_n = (-1)^n \cdot (n + 1)^2$

{25, -36, 49, -64, 81, -100, 121, -144, 169}

15. List the 3<sup>rd</sup> through the 15<sup>th</sup> terms of:  $a_n = n(n + 1)(n + 2)$

{60, 120, 210, 336, 504, 720, 990, 1320, 1716, 2184, 2730, 3360, 4080}