

The Galaxy Quest Chomper Sequence

Name _____



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? _____, _____, _____
Explain your answer.

Assume that each of the following sequences follows a certain pattern. Fill in the blank(s) with the next entry (entries) in the sequence.

- | | |
|--------------------------------------|--------------------------------------|
| 2. 3, 9, 27, 81, _____ | 12. a, a, b, b, c, c, d, d, _____ |
| 3. 2, 5, 10, 17, 26, 37, 50, _____ | 13. c, a, d, a, e, a, f, a, _____ |
| 4. 1, 4, 9, 16, 25, 36, _____ | 14. a, z, a, y, b, z, b, y, c, _____ |
| 5. 4, 13, 22, 31, 40, _____ | 15. a, b, c, c, d, e, f, f, g, _____ |
| 6. 1, 4, 8, 13, 19, _____ | 16. d, d, f, f, h, h, j, j, _____ |
| 7. 52, 49, 46, 43, 40, _____ | 17. c, d, d, e, e, e, f, f, f, _____ |
| 8. 1, -2, 4, -8, 16, _____, _____ | 18. a, b, d, e, h, i, m, n, _____ |
| 9. 1, 3, 2, 5, 3, 7, 4, _____, _____ | 19. e, f, g, h, j, k, l, n, o, _____ |
| 10. 3, 4, 2, 5, 1, 6, _____ | 20. a, g, b, h, c, _____ |
| 11. 12, 6, 3, _____, _____ | 21. k, s, j, t, i, u, h, _____ |

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 2nd 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(
```

```
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.

22. List the first 7 terms of: $a_n = 4n^2 + 1$

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

24. List the 4th through the 12th terms of: $a_n = (-1)^n \cdot (n + 1)^2$

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