**Determine whether each sequence is a geometric sequence. If yes, identify the common ratio.**

**1.** 4, 12, 36, 108, … **2.** 5, 10, 15, 20, …

**3.** 120, -60, 30, -15, … **4.** 1, -4, 16, -64, …

**5.** 50, 35, 20, … **6.** 625, 125, 25, 5, …

**Find the next three terms of each geometric sequence.**

**7.** 4, 8, 16, \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_ **8.** 1, -6, 36, \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_

**9.** 486, 162, 54, \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_ **10.** 3, 15, 75, \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_

**11.** 240, -120, 60, \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_ **12.** -5, -20, -80, \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_

**Write an equation to find the** $n^{th}$ **term of each sequence. Then find** $a\_{9}$**.**

**13.** 5, 20, 80, … **14.** -2, 10, -50, …

**15.** -65536, 16384, -4096, … **16.** 6, -18, 54, …

**17.** 1536, 768, 384, … **18.** -1, -7, -49, …

**A ball is dropped from a height of 500 meters. The table shows the height of each bounce.**

|  |  |
| --- | --- |
| **Bounce** | **Height (m)** |
| **1** | **400** |
| **2** | **320** |
| **3** | **256** |

**19.** Write a rule to represent the height of the ball after each bounce.

**20.** How high does the ball bounce on the 6th bounce?