

GEOMETRIC SERIES

USE THE FOLLOWING INFORMATION ABOUT A GEOMETRIC SERIES TO COMPLETE:

1. $a_1 = 1, a_2 = 2, S_5 =$ _____
2. $a_1 = 2, a_2 = 6, S_6 =$ _____
3. $a_1 = 1, a_2 = -3, S_6 =$ _____
4. $a_1 = 3, a_2 = -6, S_5 =$ _____
5. $a_1 = 5, r = 3, S_{10} =$ _____
6. $a_1 = 7, r = 2, S_{10} =$ _____
7. $a_1 = 6, r = -2, S_9 =$ _____
8. $a_1 = 5, r = -3, S_9 =$ _____
9. $a_1 = 10, a_2 = 9, S_{15} =$ _____ (*rounded to nearest tenth*)
10. $a_1 = 20, a_2 = 19, S_{18} =$ _____ (*rounded to nearest tenth*)
11. $\sum_{n=1}^6 2(3)^{n-1} =$ _____
12. $\sum_{n=1}^7 3(2)^{n-1} =$ _____
13. $S_n = -364, r = -3, n = 6, a_1 =$ _____
14. $S_n = 315, a_n = 5, r = 1/2, a_1 =$ _____

DETERMINE WHETHER OR NOT THE INDICATED GEOMETRIC SERIES CONVERGES. IF IT DOES, FIND THE VALUE TO WHICH IT CONVERGES:

1. $a_1 = 3$ and $r = \frac{1}{5}$

2. $a_1 = 5$ and $r = \frac{1}{3}$

3. $a_1 = 42$ and $r = -\frac{3}{4}$

4. $a_1 = 42$ and $r = -\frac{4}{3}$

5. $a_1 = 18$ and $r = \frac{7}{5}$

6. $a_1 = 100$ and $r = 0.1$

7. $a_1 = 81$ and $a_5 = 1$

8. $\sum_{n=1}^{\infty} 3\left(\frac{1}{4}\right)^{n-1}$

9. $\sum_{n=1}^{\infty} \left(-\frac{1}{3}\right)^{n-1}$

10. $\sum_{n=1}^{\infty} 7(2)^{n-1}$