PROBLEM SET 11-3
(Geometric Sequences)

Use the following information about geometric sequences to complete.

1. $a_1 = 2, \ a_2 = 6, \ a_7 = $ _____

2. $a_1 = 12, \ a_2 = 6, a_{10} = $ _____

3. $a_1 = 1, \ a_2 = -2, \ a_{10} = $ _____

4. $a_1 = 29, \ r = .95, \ a_{37} = $ _____   (*rounded to nearest thousandths*)

5. $a_1 = 3, \ r = 2, \ a_n = 1536, \ n = $ _____

6. $a_1 = 729, \ r = \dfrac{1}{3}, \ a_n = 1, \ n = $ _____

7. $a_1 = 5, \ r = -3, \ a_n = -1215, \ n = $ _____

8. $a_1 = 1728, \ r = \dfrac{1}{2}, \ a_n = 27, \ n = $ _____

Miquel is at the amphitheater and receives a text message at 12:00. Five minutes later he forwards the text message to three people. Five minutes later, those three people forward the text message to three new people. Assume this pattern continues and each time the text message is sent to people who have not received it before. The number of people who receive the text forms a geometric sequence (1, 3, …).

9. Calculate the number of people who will receive the text message at 12:30.

Find the missing geometric means.

10. 5, _____, _____, 135

11. 81, _____, _____, _____, 16

12. 1/32, _____, _____, _____, _____, 32

13. 13, _____, _____, -4459

14. x^5, _____, _____, _____, _____, _____, x^{17}

15. 13, _____, _____, 26

16. 5, _____, _____, _____, 45