13-2

NAME _____ DATE _____

Practice Worksheet

Arithmetic Sequences

Find the nth term of each arithmetic sequence.

1. $a_1 = -5, d = 4, n = 9$

2. $a_1 = 13, d = -\frac{5}{2}, n = 29$

3. $a_1 = 3, d = -4, n = 6$

4. $a_1 = -5, d = \frac{1}{2}, n = 10$

Complete each statement.

5. 97 is the ___?___th term of $-3, 1, 5, 9, \ldots$.

6. -10 is the ___?___th term of $14, 12.5, 11, 9.5, \ldots$.

Find the indicated term in each arithmetic sequence.

7. a_{15} for $-3, 3, 9, \ldots$

8. a_{19} for $17, 12, 7, \ldots$

9. a_{26} for $1, \frac{7}{3}, \frac{11}{3}, \ldots$

10. a_{35} for $17, 16\frac{2}{3}, 16\frac{1}{3}, \ldots$

Find the missing terms in each arithmetic sequence.

11. $3, \_\_\_\_, \_\_\_\_, 20$

12. $\_\_\_\_, -10, \_\_\_\_, \_\_\_\_, \_\_\_\_, 14$

13. $5, \_\_\_\_, \_\_\_\_, 27$

14. $\_\_\_\_, 4, \_\_\_\_, \_\_\_\_, \_\_\_\_, 29$

15. How many multiples of 11 are there between 13 and 384?

13-3

NAME _____ DATE _____

Practice Worksheet

Arithmetic Series

Find S_n for each arithmetic series described.

1. $a_1 = 16, a_n = 98, n = 13$

2. $a_1 = 13, d = -6, n = 21$

3. $d = -\frac{2}{3}, n = 16, a_n = 44$

4. $a_1 = -121, d = 3, a_n = 5$

Find the sum of each arithmetic series.

5. 5, 7, 9, . . . , 27

6. $-4, 1, 6, \ldots, 91$

7. 13, 20, 27, . . . , 272

8. 89, 86, 83, . . . , 20

9. $\sum_{k=3}^{8} (5k - 10)$

10. $\sum_{p=4}^{10} (2p + 1)$

11. $\sum_{n=1}^{6} (3n + 5)$

12. $\sum_{j=1}^{5} (9 - 4j)$

Find the first three terms of each arithmetic series described.

13. $a_1 = 14, a_n = -85, S_n = -1207$

14. $n = 16, a_n = 15, S_n = -120$

15. A display in a grocery store has 1 can on the top row, 2 cans on the 2nd row, 3 cans on the 3rd row, and so on. How many cans are needed to make 25 rows?

13-4

NAME _____ DATE _____

Practice Worksheet

Geometric Sequences

Find the first four terms of each geometric sequence described.

1. $a_1 = -6, r = -\frac{2}{3}$

2. $a_1 = 2, r = \sqrt{3}$

3. $a_1 = -\frac{5}{2}, r = 2$

4. $a_1 = \sqrt{2}, r = \sqrt{3}$

Find the nth term of each geometric sequence described.

5. $a_1 = 5, n = 4, r = 3$

6. $a_4 = 20, n = 6, r = -3$

7. $a_1 = -4, n = 6, r = -2$

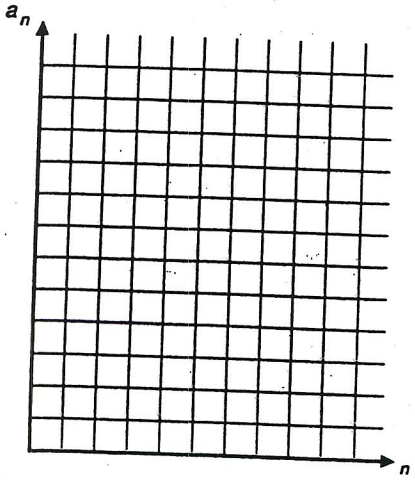
8. $a_6 = 8, n = 12, r = \frac{1}{2}$

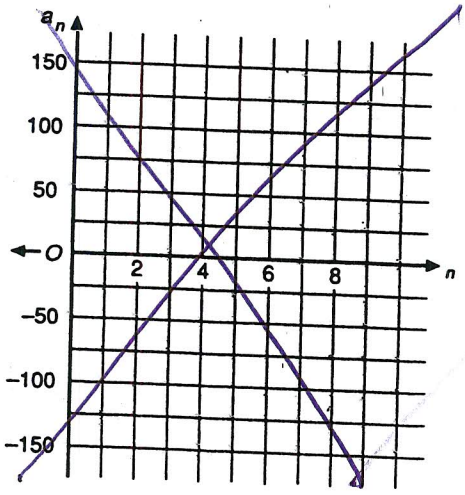
9. Each foot of water screens out 60% of the light above. What percent of the light remains after passing through 5 feet of water?

Find the missing geometric means. ~~Then graph each sequence, using the x-axis for the number of the term and the y-axis for the term itself.~~

10. _____, _____, 2, _____, _____, 54

11. 32, _____, _____, _____, 162





$162 = 32r^4$

13-5 NAME _____ DATE _____

Practice Worksheet

Geometric Series

Find the sum of each geometric series described.

1. $160 + 80 + 40 + \ldots, n = 6$

2. $a_1 = 5, r = -\frac{1}{2}, n = 7$

3. $a_2 = \frac{-3}{8}, a_3 = \frac{1}{4}, n = 5$

4. $a_3 = 8, a_5 = 2, n = 6$

Use sigma notation to express each series.

5. $54 + 18 + 6 + 2 + \frac{2}{3} + \frac{2}{9}$

6. $16 - 24 + 36 - 54 + 81 - 121.5 + 182.25$

Find a_1 for each geometric series described.

7. $S_n = -55, r = -\frac{2}{3}, n = 5$

8. $S_n = 2457, a_n = 3072, r = -4$

9. A pile driver drives a post 9 feet into the ground on its first hit. Each additional hit drives the post $\frac{2}{3}$ the distance of the prior hit. Find the total distance the post has been driven after 4 hits.

10. In problem 9, what is the greatest distance the pole could be driven into the ground?

11. Hugh Moore makes up a joke and tells it to his 5 closest friends on Sunday morning. Each of those friends tells his or her 5 closest friends on Monday morning, and so on. Assuming no duplication, how many people will have heard the joke by the end of Saturday?

12 $\sum_{x=2}^{6} -3^x$