



11-1 Skills Practice

Arithmetic Sequences

Assign circled ones

Lesson 11-1

Find the next four terms of each arithmetic sequence.

1. 7, 11, 15, ... 19, 23, 27, 31 2. -10, -5, 0, ...

3. 101, 202, 303, ... 4. 15, 7, -1, ...

5. -67, -60, -53, ... 6. -12, -15, -18, ...

-46, -39, -32, -25

Find the first five terms of each arithmetic sequence described.

7. $a_1 = 6, d = 9$ 6, 15, 24, 33, 42 8. $a_1 = 27, d = 4$

9. $a_1 = -12, d = 5$ 10. $a_1 = 93, d = -15$

11. $a_1 = -64, d = 11$ 12. $a_1 = -47, d = -20$

-64, -53, -42, -31, -20

Find the indicated term of each arithmetic sequence.

13. $a_1 = 2, d = 6, n = 12$ 68 14. $a_1 = 18, d = 2, n = 8$

15. $a_1 = 23, d = 5, n = 23$ 16. $a_1 = 15, d = -1, n = 25$

17. a_{31} for 34, 38, 42, ... 154 18. a_{42} for 27, 30, 33, ...

Complete the statement for each arithmetic sequence.

19. 55 is the ? th term of 4, 7, 10, ... 18 20. 163 is the ? th term of -5, 2, 9, ...

Write an equation for the n th term of each arithmetic sequence.

21. 4, 7, 10, 13, ... $a_n = 3n + 1$ 22. -1, 1, 3, 5, ...

23. -1, 3, 7, 11, ... $a_n = 4n - 5$ 24. 7, 2, -3, -8, ...

Find the arithmetic means in each sequence.

25. 6, ?, ?, ?, 38 14, 22, 30 26. 63, ?, ?, ?, 147

11-2 Skills Practice

Arithmetic Series

Find S_n for each arithmetic series described.

1. $a_1 = 1, a_n = 19, n = 10$ 100

2. $a_1 = -5, a_n = 13, n = 7$

3. $a_1 = 12, a_n = -23, n = 8$

4. $a_1 = 7, n = 11, a_n = 67$

5. $a_1 = 5, n = 10, a_n = 32$ 185

6. $a_1 = -4, n = 10, a_n = -22$

7. $a_1 = -8, d = -5, n = 12$

8. $a_1 = 1, d = 3, n = 15$

9. $a_1 = 100, d = -7, a_n = 37$ 685

10. $a_1 = -9, d = 4, a_n = 27$

11. $d = 2, n = 26, a_n = 42$ 442

12. $d = -12, n = 11, a_n = -52$

Find the sum of each arithmetic series.

13. $1 + 4 + 7 + 10 + \dots + 43$ 330

14. $5 + 8 + 11 + 14 + \dots + 32$

15. $3 + 5 + 7 + 9 + \dots + 19$

16. $-2 + (-5) + (-8) + \dots + (-20)$

17. $\sum_{n=1}^5 (2n - 3)$ 15

18. $\sum_{n=1}^{18} (10 + 3n)$

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

20. $\sum_{n=5}^{12} (4 - 3n)$

Find the first three terms of each arithmetic series described.

21. $a_1 = 4, a_n = 31, S_n = 175$ 4, 7, 10

22. $a_1 = -3, a_n = 41, S_n = 228$

23. $n = 10, a_n = 41, S_n = 230$ 5, 9, 13

24. $n = 19, a_n = 85, S_n = 760$



11-3 Skills Practice

Geometric Sequences

Find the next two terms of each geometric sequence.

1. $-1, -2, -4, \dots$ $-8, -16$

2. $6, 3, \frac{3}{2}, \dots$

3. $-5, -15, -45, \dots$

4. $729, -243, 81, \dots$

5. $1536, 384, 96, \dots$ $24, 6$

6. $64, 160, 400, \dots$

Find the first five terms of each geometric sequence described.

7. $a_1 = 6, r = 2$ $6, 12, 24, 48, 96$

8. $a_1 = -27, r = 3$

9. $a_1 = -15, r = -1$

10. $a_1 = 3, r = 4$

11. $a_1 = 1, r = \frac{1}{2}$
 $1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}$

12. $a_1 = 216, r = -\frac{1}{3}$

Find the indicated term of each geometric sequence.

13. $a_1 = 5, r = 2, n = 6$ 160

14. $a_1 = 18, r = 3, n = 6$

15. $a_1 = -3, r = -2, n = 5$

16. $a_1 = -20, r = -2, n = 9$

17. a_8 for $-12, -6, -3, \dots$ $-\frac{3}{32}$

18. a_7 for $80, \frac{80}{3}, \frac{80}{9}, \dots$

Write an equation for the n th term of each geometric sequence.

19. $3, 9, 27, \dots$ $a_n = 3^n$

20. $-1, -3, -9, \dots$

21. $2, -6, 18, \dots$ $a_n = 2(-3)^{n-1}$

22. $5, 10, 20, \dots$

Find the geometric means in each sequence.

23. $4, \underline{\quad}, \underline{\quad}, \underline{\quad}, 64$ $\pm 8, 16, \pm 32$

24. $1, \underline{\quad}, \underline{\quad}, \underline{\quad}, 81$

Lesson 11-3



11-4 Skills Practice

Geometric Series

Find S_n for each geometric series described.

1. $a_1 = 2, a_5 = 162, r = 3$ **242**

2. $a_1 = 4, a_6 = 12,500, r = 5$

3. $a_1 = 1, a_8 = -1, r = -1$

4. $a_1 = 4, a_n = 256, r = -2$

5. $a_1 = 1, a_n = 729, r = -3$ **547**

6. $a_1 = 2, r = -4, n = 5$

7. $a_1 = -8, r = 2, n = 4$

8. $a_1 = 3, r = -2, n = 12$

9. $a_1 = 8, r = 3, n = 5$ **968**

10. $a_1 = 6, a_n = \frac{3}{8}, r = \frac{1}{2}$

11. $a_1 = 8, r = \frac{1}{2}, n = 7$

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

Find the sum of each geometric series.

13. $4 + 8 + 16 + \dots$ to 5 terms **124**

14. $-1 - 3 - 9 - \dots$ to 6 terms

15. $3 + 6 + 12 + \dots$ to 5 terms

16. $-15 + 30 - 60 + \dots$ to 7 terms

17. $\sum_{n=1}^4 3^{n-1}$ **40**

18. $\sum_{n=1}^5 (-2)^{n-1}$

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

20. $\sum_{n=1}^9 2(-3)^{n-1}$

Find the indicated term for each geometric series described.

21. $S_n = 1275, a_n = 640, r = 2; a_1$ **5**

22. $S_n = -40, a_n = -54, r = -3; a_1$

23. $S_n = 99, n = 5, r = -\frac{1}{2}; a_1$ **144**

24. $S_n = 39,360, n = 8, r = 3; a_1$

Lesson 11-4