

Practice Test Chapter 9

Date _____ Period ____ Score _____

Find the three terms in the sequence after the last one given.

1) $-37, -237, -437, -637, \dots$

Given the first term and the common difference of an arithmetic sequence find the explicit formula.

3) $a_1 = 26, d = 9$

Find the three terms in the sequence after the last one given.

5) $-2, 12, -72, 432, \dots$

Given the first term and the common ratio of a geometric sequence find the explicit formula.

7) $a_1 = -2, r = 6$

Evaluate each arithmetic series described.

9) $a_1 = 21, a_n = 109, n = 12$

Determine the number of terms n in each arithmetic series.

11) $a_1 = 22, a_n = 66, S_n = 528$

Given the explicit formula for an arithmetic sequence find the first five terms.

2) $a_n = -28 + 3n$

Given two terms in an arithmetic sequence find the term named in the problem.

4) $a_{20} = -159$ and $a_{30} = -229$

Find a_{38}

Given the explicit formula for a geometric sequence find the first five terms.

6) $a_n = -2 \cdot (-2)^{n-1}$

Given two terms in a geometric sequence find the term named in the problem.

8) $a_5 = -16$ and $a_6 = 32$

Find a_{12}

Evaluate each geometric series described.

10) $\sum_{i=1}^{25} (2i - 5)$

12) $\sum_{n=1}^8 -4 \cdot 2^{n-1}$

Determine the number of terms n in each geometric series.

13) $a_1 = 4$, $r = 6$, $S_n = 6220$

Expand completely.

15) $(4 + a)^4$

Find each coefficient described.

17) Coefficient of y^2x^3 in expansion of $(3y - x^3)^3$

Find the number of possibilities in each scenario.

18) The student body of 65 students wants to elect three representatives.

Evaluate each infinite geometric series described.

14) $\sum_{i=1}^{\infty} 3 \cdot \left(-\frac{1}{5}\right)^{i-1}$

Find each term described.

16) 2nd term in expansion of $(2x^2 - 3y)^3$

Events A and B are independent. Find the missing probability.

20) $P(A) = \frac{11}{20}$ $P(B) = \frac{11}{20}$ $P(A \cap B) = ?$

Events A and B are mutually exclusive. Find the missing probability.

21) $P(B) = \frac{2}{5}$ $P(A \cup B) = \frac{3}{5}$ $P(A) = ?$

Find the probability.

22) You select a card from a standard shuffled deck of 52 cards. You return the card, shuffle, and then select another card. Both times the card is a diamond. (Note that 13 of the 52 cards are diamonds.)

23) A box of chocolates contains six milk chocolates and six dark chocolates. You randomly pick a chocolate and eat it. Then you randomly pick another piece. Both pieces are milk chocolate.

24) You roll a fair six-sided die. The die shows an odd number or a number less than five.

25) A bag contains four real diamonds and two fake diamonds. If four diamonds are picked from the bag at random, what is the probability that all of them are real?

Answers to Practice Test Chapter 9 (ID: 1)

- 1) $-837, -1037, -1237$ 2) $-25, -22, -19, -16, -13$ 3) $a_n = 17 + 9n$
4) $a_{38} = -285$ 5) $-2592, 15552, -93312$ 6) $-2, 4, -8, 16, -32$
7) $a_n = -2 \cdot 6^{n-1}$ 8) $a_{12} = 2048$ 9) 780 10) 525
11) 12 12) -1020 13) 5 14) $\frac{5}{2}$
15) $256 + 256a + 96a^2 + 16a^3 + a^4$ 16) $-36x^4y$ 17) -27
18) $43,680$ 19) $39,916,800$ 20) $\frac{121}{400}$ 21) $\frac{1}{5}$
22) $\frac{1}{16} \approx 0.063$ 23) $\frac{5}{22} \approx 0.227$ 24) $\frac{5}{6} \approx 0.833$ 25) 6.667%