

Practice Test Chapter 9

Date _____ Period _____

Find the first four terms in each sequence.

1) $a_n = -3 + 9n$

For each sequence, state if it is arithmetic, geometric, or neither.

2) $a_n = 2^n - 1$

Find the common difference.

3) $-5.8, -4.7, -3.6, -2.5, \dots$

Find the term named in the problem.

4) $-30, 70, 170, 270, \dots$

Find a_{30}

Find the nth term formula.

5) $-1.2, -1.3, -1.4, -1.5, \dots$

Given two terms in an arithmetic sequence find the nth term formula.

6) $a_{16} = 1528$ and $a_{32} = 3128$

Find the common ratio.

7) $0.5, -2, 8, -32, \dots$

Given the nth term formula for a geometric sequence find the 7th term.

8) $a_n = 1.25 \cdot 4^{n-1}$

Given two terms in a geometric sequence find the nth term formula.

9) $a_6 = 2$ and $a_3 = -54$

Evaluate each series.

10) $\sum_{a=1}^5 a$

11) $\sum_{k=1}^7 5k^2$

Evaluate each arithmetic series described.

12) $a_1 = 15, d = 5, n = 9$

13) $14.1 + 16.5 + 18.9 + 21.3, \dots, n = 14$

Determine the number of terms n in each arithmetic series.

14) $a_1 = 10.3, a_n = 37.6, S_n = 958$

Evaluate each geometric series described.

15) $\sum_{i=1}^8 5^{i-1}$

Determine the number of terms n in each geometric series.

$$16) \sum_{i=1}^n \left(\frac{1}{2}\right)^{i-1} = \frac{31}{16}$$

Determine the common ratio of the infinite geometric series.

$$18) a_1 = -2.7, S = -3.375$$

Find the number of possible outcomes in the sample space.

19) A jewelry store sells gold and platinum rings. Each ring is available in five styles and is fitted with one of eight gemstones.

Evaluate each infinite geometric series described.

$$17) \sum_{m=1}^{\infty} \left(-\frac{1}{3}\right)^{m-1}$$

20) A basketball player attempts five free throws. Each attempt results in a score or a miss.

Find the probability.

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

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

$$22) P(B) = \frac{1}{5} \quad P(A \cap B) = \frac{1}{20} \quad P(A) = ?$$

Find the probability.

23) A litter of kittens consists of three gray kittens, two black kittens, and two mixed-color kittens. You randomly pick one kitten. The kitten is gray or mixed-color.

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

$$24) P(A) = \frac{2}{5} \quad P(A \cup B) = \frac{9}{10} \quad P(B) = ?$$

Find the probability of each event.

25) A chemistry lab requires students to identify chemical compounds by using various tests. Each student is given samples of three different compounds, labeled A, B, and C. Each student is also given a list of eight possible compounds. If a student does not perform the tests and randomly chooses three from the list, what is the probability that he guesses all three correctly?

Answers to Practice Test Chapter 9 (ID: 1)

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|---|-----------------------|---------------------------------|--------------------|
| 1) 6, 15, 24, 33 | 2) Neither | 3) $d = 1.1$ | 4) $a_{30} = 2870$ |
| 5) $a_n = -1.1 - 0.1n$ | 6) $a_n = -72 + 100n$ | 7) $r = -4$ | 8) $a_8 = 20480$ |
| 9) $a_n = a_{n-1} \cdot -\frac{1}{3}$
$a_1 = -486$ | 10) 15 | 11) 700 | 12) 315 |
| 13) 415.8 | 14) 40 | 15) 97656 | 16) 5 |
| 17) $\frac{3}{4}$ | 18) 0.2 | 19) 80 | 20) 32 |
| 21) $\frac{5}{26} \approx 0.192$ | 22) $\frac{1}{4}$ | 23) $\frac{5}{7} \approx 0.714$ | 24) $\frac{1}{2}$ |
| 25) 0.298% | | | |