

Practice Question # 1

- The first term of an arithmetic sequence is 36 and the fifteenth term is -62 . What is the common difference?

Practice Question # 2

- What is the sum for a geometric series $5 + 15 + 45 + \dots$ up to 13 terms?

Practice Question # 3

- Each year, students at Upton Academy must select class presidents, vice-presidents, and secretaries. If the junior class has 37 students, how many different winning slates are possible?

Practice Question # 4

- What is the probability of drawing a five and a club from a standard deck of cards if replacement does not occur?
- What is the probability of drawing a King or a red card from a standard deck of cards?

Practice Question # 5

- Billy typically makes 68% of his free-throw shots. If he shoots 5-free throws, what is the probability that he will get at least 4 of them?

Practice Question # 6

- Mr. Francis teaches two small Algebra 1 classes. Below are his classes' scores on their last test:
1st Period: {78, 95, 83, 80, 90, 72, 45, 67, 94, 89}
2nd Period: {63, 87, 82, 91, 54, 74, 85, 94, 97, 81}

What is the **difference** between the means of the classes' scores?

Practice Question # 7

- Solve for x:

a.) $4e^{x+3} - 6 = 26$ b.) $\log_2(\ln x + 4) = 3$

Practice Question # 8

- Given the function: $f(x) = \begin{cases} 2x-5 & \text{if } x \leq 1 \\ 4-3x^2 & \text{if } x > 1 \end{cases}$

Find: $f(4) + 2f(-3) - 5f(1)$

Practice Question # 9

- A power function contains the points (4, 8) and (6, 10).

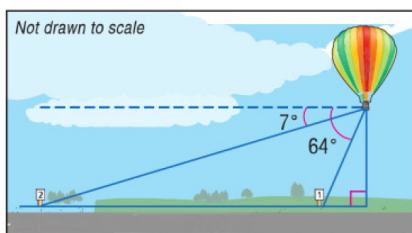
What is the value of y when x = 15?

Practice Question # 10

- The shelf life of a particular dairy product is normally distributed with a mean of 15 days and a standard deviation of 4 days. What percent of the products lasts between 3 and 19 days?

Practice Question # 11

- A hot-air balloon crosses over a straight portion of interstate, its pilot eyes two consecutive mile posts on the same side of the balloon. How high is the balloon in ft?



Practice Question # 12

- Ships and airplanes measure distance in nautical miles. The formula $1 \text{ nautical mile} = 6077 - 25 \cos(2\theta)$ is given where θ = latitude line in degrees. What is the degree of latitude if a ship is 6,061.5 nautical miles from this latitude line?