

Problem Solving and Data Analysis

Drill 1 (Calculator)

1. In an animal shelter consisting of only dogs and cats, the ratio of dogs to cats is 3 to 1. If there are 360 animals in the shelter, how many dogs must be present?
(A) 90
(B) 120
(C) 270
(D) 300
2. A reporter finds that on average, a particular politician receives 14 seconds of applause out of every minute of a speech. If the politician were to give a speech for exactly two hours, how many minutes of the speech would be devoted to applause?
(A) 14
(B) 28
(C) 37
(D) 1680
3. Whole milk has 3.5% fat content. If you used equal amounts of 1% and 2% milk, how many total gallons of the combined milk would you use to equal the fat content in exactly 1 gallon of whole milk?
(A) $\frac{1}{200}$
(B) $\frac{1}{2}$
(C) $1\frac{1}{6}$
(D) $2\frac{1}{3}$

4. Katie is interested in running a marathon, which is 26.2 miles long. She just finished a 5-kilometer race, and she wants to see how many 5K races she would have to complete in order to equal a full marathon. Given that there are approximately 0.62 miles in 1 kilometer, how many complete 5K races would Katie have to complete to go at least the distance of a marathon?

(A) 6
(B) 8
(C) 9
(D) 10

5. At the beginning of the year, 1 U.S. dollar can be exchanged for 0.9 euros, and 1 Canadian dollar can be exchanged for 0.7 U.S. dollars. If someone wants to convert 100 Canadian dollars to euros at these exchange rates and assuming that there are no transaction fees, how many euros would the person have after the conversion?

(A) 63
(B) 78
(C) 129
(D) 158

Spread of a Computer Virus

Day	Number of Computers Infected
1	101
2	110
3	200
4	1,100
5	10,100

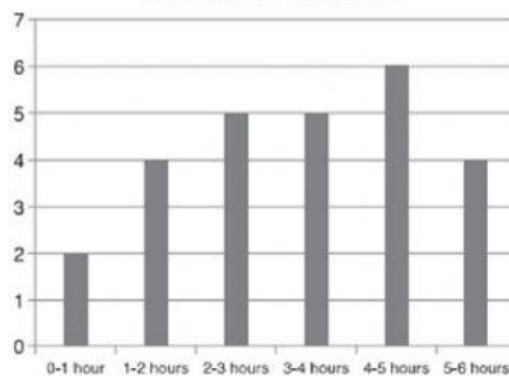
6. The table above gives the number of computers infected with a virus. Which of the following functions models the number of computers infected, $C(d)$, after d days?

(A) $C(d) = 10^{2d} + 10(d-1) + 1$
(B) $C(d) = 100 + 10^d$
(C) $C(d) = 100 + 10(d-1) + 1$
(D) $C(d) = 100 + 10^{(d-1)}$

7. Light travels at approximately 3.00×10^8 meters per second. When the planet Jupiter is at its closest point to Earth, it is 588 million kilometers away. When Earth and Jupiter are this close, approximately how many minutes does light reflected off of Jupiter take to reach Earth?

(A) 3 minutes
(B) 33 minutes
(C) 58 minutes
(D) 18 minutes

Number of Students



8. A group of 26 teenagers was asked about their daily smart phone usage. What was the median range of hours that this group used smart phones each day?

(A) Between 1 and 2
(B) Between 2 and 3
(C) Between 3 and 4
(D) Between 4 and 5

Questions 9–10 are about the following table.

	Finished Summer Reading	Did Not Complete Summer Reading	
Mrs. Smith's Class	21	8	29
Mr. Walker's Class	14	17	31
	35	25	

9. Given that the average of Mrs. Smith's and Mr. Walker's classes together represents the average enrollment in each English class at the school and that there are a total of 14 English classes, how many total students are enrolled in English classes at the school, assuming that students are enrolled in exactly one English class?
- (A) 280
(B) 420
(C) 560
(D) 840
10. The high school principal wants to evaluate the effectiveness of the teachers in getting their students to complete the summer reading assignments. The principal assigns 5 points to each student who completes the assignment and gives 0 points to each student who fails to complete the assignment. What is the difference between the mean and the median of the point values given to students in Mr. Walker's class?
- (A) 1.38
(B) 1.60
(C) 2.26
(D) 2.74