

AP Calculus – Across and Down

Clue Set: #19

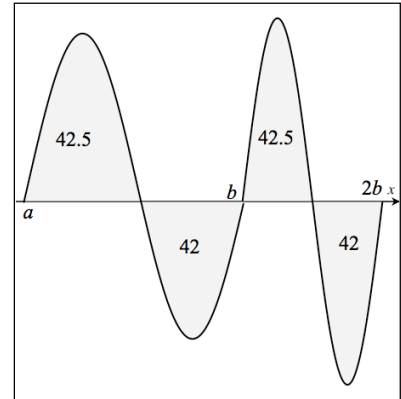
Topic: Average Value

Only digits (0 – 9) and negative signs are allowed. If an answer is an integer, use leading zeros to make the answer fit. (Ex: If 4 digits are required and your answer is 46, enter 0046.) If an answer has decimal places, the decimal point is dropped and trailing zeros are used to make the answer fit to the required number of decimal places which is specified in the problem. (Ex: If 2 decimal places are required and your answer is 12.4682, round to 12.47 and enter 1247. If one decimal place is required and your answer is 15, write 15.0 and enter 150. If one decimal place is required and your answer is 0.5, write 05.)



Across

A23. In the graph of $f(x)$ to the right (not to scale), the average value of f on the interval $[a, b]$ is $\frac{1}{126}$. The average value of f on the interval $[a, 2b]$ is $\frac{1}{92}$. Find a and b and write the two values left to right.



A32. (Gr. Calc.) Find the average value of $y = \frac{4 \ln(20x^2 + 1)}{x}$ on $(0, 7]$ accurate to 2 decimal places. Enter 999 if you feel that the answer is infinite.

Down

D7. (Gr. Calc.) Find the average value of $f(x) = \frac{7 \sin 2x - 2 \cos 3x + 2}{10}$ on the interval $[0, 2.4]$. (1 dec. pl.)

D64. (Gr. Calc.) The temperature in Las Vegas, Nevada is given by the formula $T(t) = 18 \sin\left(\frac{\pi t}{6} - 2\right) + 91$

where t represents the number of hours after 9 AM and $0 \leq t \leq 12$. Frank plays a round of golf in which he is on the course from 11:15 AM until 3:27 PM. What is the average temperature (nearest degree) during the time he is on the course?