

# AP Calculus – Across and Down

Clue Set: #2

## Topic: Basic Derivatives

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.)



### Across

A39. If  $f(x) = \frac{-45}{2x^2 + x - 4}$ , find  $\lim_{h \rightarrow 0} \frac{f\left(\frac{1}{2} + h\right) - f\left(\frac{1}{2}\right)}{h}$ .

A73. If  $f(x) = \frac{14x^2 - 4x - 1}{2x}$ , find  $f'\left(\frac{1}{4}\right) \cdot f'\left(-\frac{1}{4}\right)$ .

### Down

D18. The tangent line to  $y = 12.75 + 7x - x^2$  has  $x$ -intercept 10.75 and  $y$ -intercept 43. At what value of  $x$  does the tangent line intercept the curve? (One decimal place)

D47. If  $f$  is the function whose graph is shown and  $g(x) = \sqrt{x}f(x)$ , find  $g'(4)$ .

