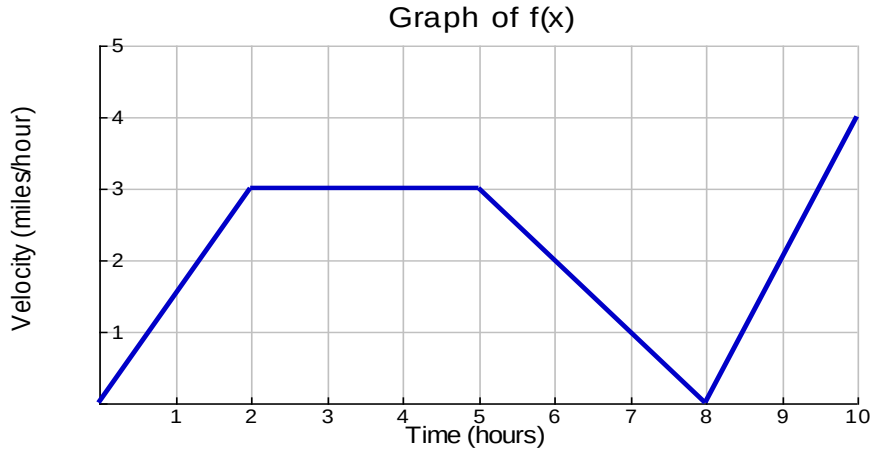
Welcome to AP Calculus!



A. Functional Values

$f(4)=$	$f(0)=$	$f(8)=$
$f(3)=$	$f(9)=$	$f(1)=$

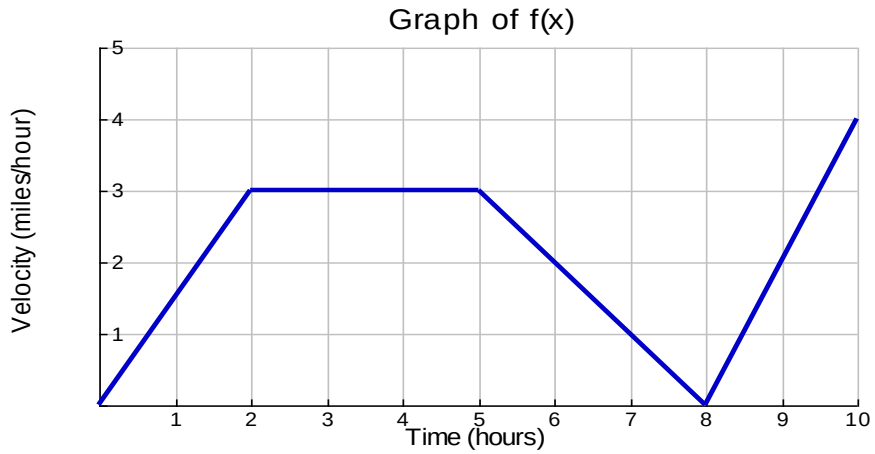
What might f(3) mean in the "real world"?

What is happening from x = 2 to x = 5?

B. Limits ($\lim_{x\to 3} f(x)$ means what does f(x) get close to as x approaches 3)

$\lim_{x\to 3} f(x)=$	$\lim_{x\to 8} f(x)=$	$\lim_{x\to 7} f(x)=$
$\lim_{x\to 6} f(x)=$	$\lim_{x\to 0^+} f(x)=$	$\lim_{x\to 10^-} f(x)=$

As the time approaches 10 hours, what is Smiley Face's velocity?



C. Derivatives ($f'(1)$ means find the rate of change at x = 1. In other words find the slope at 1 or the acceleration of Smiley Face at 1 hour.

$f'(1) =$	$f'(3) =$	$f'(7) =$
$f'(9) =$	$f'(6) =$	* $f'(2) =$

What does $f'(6)$ mean in the "real world"

What is Smiley Face's acceleration at x = 3?

D. Integrals ($\int_2^5 f(x)dx$ means find the area under the graph of f(x) from x = 2 to x = 5. Hint: Direction matters)

$\int_2^5 f(x)dx$	$\int_0^2 f(x)dx$	$\int_5^8 f(x)dx$
$\int_8^{10} f(x)dx$	$\int_0^{10} f(x)dx$	* $\int_5^2 f(x)dx$

What does $\int_2^5 f(x)dx$ mean in the "real world"?

How far does Smiley travel from x = 0 to x = 10?