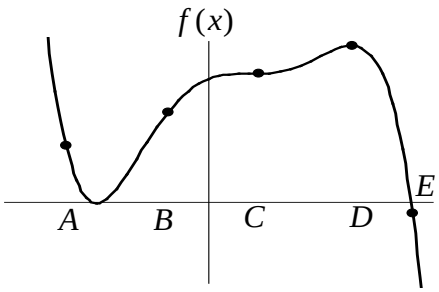
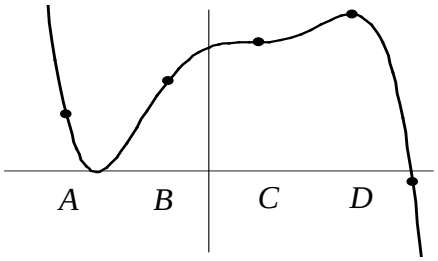
SECOND DERIVATIVES (2.5)

1. The graph of $f(x)$ is shown below. In each of the entries in the table indicate whether the function is positive, negative, or zero at the points *A*, *B*, *C*, *D*, and *E*.



	$f(x)$	$f'(x)$	$f''(x)$
A			
B			
C			
D			
E			

2. The graph of $g'(x)$ is shown below. Of the points *A*, *B*, *C*, and *D*, determine where the following functions are $g'(x)$ least or greatest.



$g(x)$ is least _____
$g(x)$ is greatest _____

$g'(x)$ is least _____
$g'(x)$ is greatest _____

$g''(x)$ is least _____
$g''(x)$ is greatest _____

3. Sketch a graph of a function $f(x)$ with the following properties:
$f(3)=6$, $f'(3)=0$, $f'(8)$ is undefined, $\lim_{x\to-\infty} f(x)=0$, $\lim_{x\to\infty} f(x)=+\infty$,
$f''(x)>0$ for $x<1$, $x>8$, $f(x)$ is continuous and defined everywhere.

4. Each of the graphs at the right shows the position of a particle moving in a line as a function of time. During the indicated time interval, which particle has

Constant velocity _____
Greatest initial velocity _____
Greatest average velocity _____
Zero average velocity _____
Zero acceleration _____
Positive acceleration throughout _____