1. Let $g(x)$ be a differentiable function such that $g(0) = 2$.
Let $f(x) = g(x)\arctan(2x)$. Then $f'(0) =$

4   3   5   6   7

2. Let $g(x)$ be a continuous function such that $\int_0^4 g(x)\,dx = 12$, and let

$I_1 = \int_0^{\pi/2} g(4\sin x)\cos x\,dx;$ $\qquad\qquad I_2 = \int_1^9 \sqrt{x} - \frac{1}{x^2}\,dx.$

Choose the TWO correct statements below.

$I_1 = 3$	$I_2 = \frac{148}{9}$
$I_1 = 2$	$I_2 = \frac{55}{3}$
$I_1 = 4$	$I_2 = 18$
$I_1 = 0$	$I_2 = 12$

3. Choose ALL statements that are true.

If $f(x)$ is continuous for all x, then $f(x)$ is differentiable for all x.

If $f(x)$ is differentiable for all x, then $f(x)$ is continuous for all x.

If $f(x)$ is continuous for all x, then $|f(x)|$ is continuous for all x.

If $|f(x)|$ is continuous for all x, then $f(x)$ is continuous for all x.