

Aisle _____

Find the absolute maximum and minimum values of f on the given interval and state where those values occur.

1. $f(x) = 4x^2 - 4x + 1; [0, 1]$

2. $f(x) = \frac{3x}{\sqrt{4x^2+1}}; [-1, 1]$

3. $f(x) = x - \tan x; \left[-\frac{\pi}{4}, \frac{\pi}{4}\right]$

4. $f(x) = x^2 - 3x - 1; (-\infty, \infty)$

5. $f(x) = 4x^3 - 3x^4; (-\infty, \infty)$

6. $f(x) = \frac{x^2}{x+1}; (-5, -1)$

<p>7. $f(x) = x^{\frac{2}{3}}(20 - x); [-1, 20]$</p>	<p>8. $f(x) = \sin^2 x + \cos x; [-\pi, \pi]$</p>
<p>9. $f(x) = x^3 e^{-2x}; [1, 4]$</p>	<p>10. $f(x) = \frac{x}{2} + \ln(x^2 + 1); [-4, 0]$</p>
<p>11. $f(x) = \sin(\cos x); [0, 2\pi]$</p>	<p>12. $f(x) = \begin{cases} 4x - 2, & x < 1 \\ (x - 2)(x - 3), & x \geq 1 \end{cases}; \left[\frac{1}{2}, \frac{7}{2}\right]$</p>