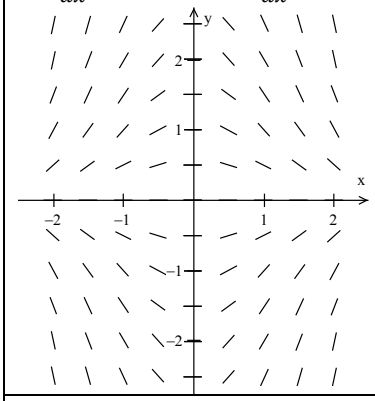
AP Calculus Name: _____

Multiple Choice Monday #2 Date: _____ Per: ____

Problem	Section Name
1. If $y = \ln(6x^3 - 2x^2)$, then $f'(x) =$ (A) $\frac{9x+2}{3x^2-x}$ (B) $\frac{9x+2}{3x^2+x}$ (C) $\frac{9x-2}{3x^2-x}$ (D) $\frac{9x-2}{3x^2+x}$ (E) $\frac{18x^2+4x}{6x^3-2x^2}$	
2. $\int \frac{x^3}{2} dx =$ (A) $\frac{x^4}{8} + C$ (B) $\frac{x^4}{2} + C$ (C) $2x^4 + C$ (D) $\frac{3}{2}x^2 + C$ (E) $8x^4 + C$	
3. The figure below shows a slope field for one the differential equations given below. Identify the equation. (A) $\frac{dy}{dx} = y - x$ (B) $\frac{dy}{dx} = -xy$ (C) $\frac{dy}{dx} = 2x$ (D) $\frac{dy}{dx} = \frac{x}{y}$ (E) $\frac{dy}{dx} = -2y$ 	
4. For what value of x does the function $f(x) = x^3 - 9x^2 - 120x + 6$ have a local minimum? (A) 10 (B) 4 (C) 3 (D) -4 (E) -10	

5. The acceleration of a particle moving along the $x-axis$ at time t is given by $a(t)=4t-12$. If the velocity is 10 when $t=0$ and the position is 4 when $t=0$, then the particle is changing directions at (A) $t=1$ (B) $t=3$ (C) $t=5$ (D) $t=1$ and $t=5$ (E) $t=1$ and $t=3$ and $t=5$	
6. Where does the curve $y=5-(x-2)^{2/3}$ have a cusp? (A) $(0,5)$ (B) $(5,2)$ (C) $(2,5)$ (D) $(5,0)$ (E) There is no cusp	
*7. Find the equation of the line tangent to the graph $y=2x-3x^{-2/3}+5$ at $x=8$ (A) $y=\frac{33}{16}x+\frac{15}{4}$ (B) $y=\frac{15}{4}x+\frac{33}{16}$ (C) $y=\frac{16}{33}x+\frac{4}{15}$ (D) $y=\frac{16}{33}x+\frac{15}{4}$ (E) $y=\frac{33}{16}x+\frac{4}{15}$	
*8. Approximate the area under the curve $y=x^2+2$ from $x=1$ to $x=2$ using four midpoint rectangles. (A) 4.333 (B) 3.969 (C) 4.719 (D) 4.344 (E) 4.328	
*9. The volume generated by revolving about the $x-axis$ the region above the curve $y=x^3$ and below the line $y=1$, and between $x=0$ and $x=1$ is (A) $\frac{\pi}{42}$ (B) 0.143π (C) $\frac{\pi}{7}$ (D) 0.643π (E) $\frac{6\pi}{7}$	