Present neatly. Justify for full credit. No Calculators.

Name _____ Score _____ ~10 minutes / A

1. Find the equation of all lines through the origin that are tangent to the curve $y = x^3 - 9x^2 - 16x$.
2. Use the definition of the derivative to find $\frac{d}{dx}\left(\frac{1}{\sqrt{x-3}}\right)$.

Present neatly. Justify for full credit. No Calculators.

Name _____ Score _____ ~10 minutes / F

1. Find all values of x for which the tangent line to the curve $y = 2x^3 - x^2$ is perpendicular to the line $x + 4y = 10$.

2.Use the definition of the derivative to find $\frac{d}{dx}\left(\frac{x-\pi}{x+m}\right)$.
