

Name: _____

1. Which of these differential equations gives Newton's second law relating force F , mass m , and position x (where derivatives are taken with respect to time)?
 - A. $F' = m/x$
 - B. $F'' = m/x$
 - C. $F/m = x'$
 - D. $F/m = x''$

2. Find the roots of $2x^2 - 5x - 3$.
 - A. $\frac{1}{3}, 4$
 - B. None of these.
 - C. $-\frac{1}{2}, 3$
 - D. $\frac{1}{4}, -1$

3. Simplify $e^{1+\frac{\pi}{3}i}$.
 - A. $\frac{e}{2} + \frac{e\sqrt{3}}{2}i$
 - B. $\frac{e}{3} - \frac{e\sqrt{2}}{2}i$
 - C. None of these.
 - D. $-\frac{e}{4} + \frac{e}{2}i$

4. Find $\int xe^{2x} dx$.
 - A. None of these.
 - B. $\frac{1}{2}xe^{2x} - \frac{1}{4}e^{2x} + C$
 - C. $\frac{1}{4}xe^{2x} + \frac{1}{2}e^{2x} + C$
 - D. $-\frac{1}{8}xe^{2x} + \frac{1}{2}e^{2x} + C$

5. Find a solution to the system $2x - y = 3$ and $3x + 2y = 8$.
 - A. $(x, y) = (2, 1)$
 - B. $(x, y) = (-1, 1)$
 - C. $(x, y) = (3, -2)$
 - D. None of these.