

YOUR NAME: _____

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Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Let $f'(x) = \frac{x^2 + \sqrt{x}}{x}$. If $f(1) = 3$, find $f(x)$.

2. If the acceleration function of a moving particle is $a(t) = \cos t + \sin t$, find the position of the particle, if it is given that $s(0) = 0$ and $v(0) = 5$.

3. Use the **definition of the definite integral** to compute $\int_2^5 (2x - 1)dx$.
(Recall $\sum_{i=1}^n i = \frac{n(n+1)}{2}$.)