Name: _____

Quiz 22 ♡

MATH 200
December 1, 2021

1. (6 points) $\displaystyle\int \frac{x^3 + x^2 + x}{x^2}\, dx =$

2. (7 points) Suppose $f(x)$ is a function for which $f'(x) = \dfrac{1}{x} + 2x$ and $f(1) = 5$. Find $f(x)$.

3. (7 points) A falling object has a velocity of $-32t - 16$ feet per second t seconds after it is dropped. It hits ground 10 seconds after being dropped. From what height was it dropped?

Name: _____

Quiz 22 ♣

MATH 200
December 1, 2021

1. (6 points) $\displaystyle\int \frac{x-1}{x}\,dx =$

2. (7 points) Suppose $f(x)$ is a function for which $f'(x) = e^x + 2x$ and $f(0) = 5$. Find $f(x)$.

3. (7 points) An object moving on the number line has velocity $v(t) = 3t^2 + 4$ at time t seconds. It is at the point 2 on the number line the instant its acceleration is 12 units per second per second. Find the position function $s(t)$.

Name: _____

Quiz 22 ♢

MATH 200
December 1, 2021

1. (6 points) $\displaystyle\int \frac{3x^2 + 5x}{x^2}\, dx =$

2. (7 points) Suppose $f(x)$ is a function for which $f'(x) = 2x + \cos(x)$ and $f(\pi) = 0$. Find $f(x)$.

3. (7 points) Suppose an object moving on a line has velocity function $v(t) = 2t + 3$. Find its position function $s(t)$, given that you happen to know $s(2) = 8$.

Name: _____

Quiz 22 ♠

MATH 200
December 1, 2021

1. (6 points) $\displaystyle\int \frac{x + xe^x}{x}\,dx =$

2. (7 points) Suppose $f(x)$ is a function for which $f'(x) = 3\sqrt{x} - 2$ and $f(4) = 7$. Find $f(x)$.

3. (7 points) A ball, tossed straight up, has a constant acceleration of -32 feet per second per second. At time $t = 0$ its velocity is $v(0) = 10$ feet per second, and its position is $s(0) = 6$ feet. Find the position function $s(t)$.