ID#_____ **Quiz 1 MATH 102-10 T091** **Serial #_____**

1. Estimate the area under the curve $f(x) = 1 + x^2$ from $x = 0$ to $x = 8$ by using Four Rectangles and the Mid-Point Rule.

2. Find the interval on which the curve

$$y = \int_0^x \frac{dt}{1 + t + t^2}$$

is **Concave Upward**.

(Hint: Check when $y'' > 0$)

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ID#_____ ***Quiz 1 MATH 102-10 T091** **Serial #_____**

1. Evaluate the integral $\int_{-2}^{0}(x+\sqrt{4-x^2})dx$ by interpreting it in terms of areas.

2. A particle moves along a line **so that its velocity at time *t* is**

$$v(t)=(t^2-t-6) \text{ m/sec.}$$

Find the distance traveled during the period $1\le t\le 4$.

ID#_____ **Quiz 1 MATH 102-6 T091** **Serial #_____**

1. Determine the region where the area is equal to the given limit:

$$\lim_{n\to\infty}\sum_{i=1}^{n}\left[2+\left(\frac{6i}{n}\right)^2\right]\frac{i}{n}.$$

(Do not solve the limit)

2.Find $G''(1)$ when $G(x)=\int_{x^2}^{0}\frac{dt}{1+t}$

ID#_____ ***Quiz 1 MATH 102-6 T091** **Serial #_____**

1. Find the value of the integral $\int_{-2}^{0}(1+2x)dx$ by using the definition

$$\int_a^b f(x)dx = \lim_{n\to\infty}\sum_{i=1}^{n} f(x_i)\Delta x \ .$$

2.Evaluate the integral $\int_0^{\frac{\pi}{4}} f(x)dx$ by using antiderivative when

$$f(x) = \begin{cases} x+1, & -1 \le x \le 0, \\ \sec^2 x, & 0 \le x \le \dfrac{\pi}{4}. \end{cases}$$