Math 1215: Quiz #2 **Winter 2018**

Name: SOLUTIONS	A#:	Section:

1. Evaluate $\int_1^2 x(1-2x^2)\,dx$.

$$= \int_1^2 (x - 2x^3)\,dx$$

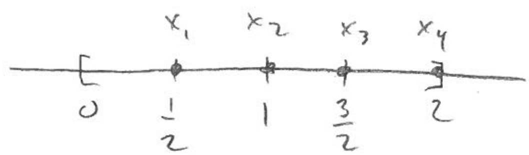
$$= \left(\frac{1}{2}x^2 - \frac{1}{2}x^4\right)\Big|_1^2$$

$$= \left(\frac{4}{2} - \frac{16}{2}\right) - \left(\frac{1}{2} - \frac{1}{2}\right)$$

$$= \boxed{-6}$$

2. Approximate $\int_0^2 \sqrt{x}\,dx$ by a Riemann sum with $N = 4$ subintervals, using right endpoints. **Leave your answer as a sum.**

$$\Delta x = \frac{2-0}{4} = \frac{1}{2}$$



$$\int_0^2 \sqrt{x}\,dx \approx \left(\sqrt{\tfrac{1}{2}} + \sqrt{1} + \sqrt{\tfrac{3}{2}} + \sqrt{2}\right)\cdot\frac{1}{2}$$

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Name: SOLUTIONS	**A#:**	**Section:**

1. Evaluate $\int_{-1}^{0} x^2(1+3x)\,dx$.

$$= \int_{-1}^{0} (x^2 + 3x^3)\,dx$$

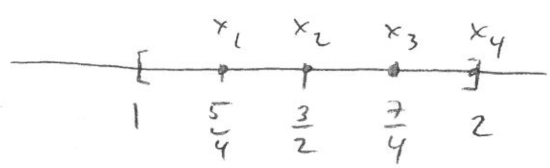
$$= \left(\frac{1}{3}x^3 + \frac{3}{4}x^4\right)\Big|_{-1}^{0}$$

$$= (0) - \left(-\frac{1}{3} + \frac{3}{4}\right)$$

$$= \boxed{\frac{-5}{12}}$$

2. Approximate $\int_{1}^{2} e^x\,dx$ by a Riemann sum with $N = 4$ subintervals, using right endpoints.
Leave your answer as a sum.

$$\Delta x = \frac{2-1}{4} = \frac{1}{4}$$



$$\int_1^2 e^x\,dx \approx \boxed{\left(e^{5/4} + e^{3/2} + e^{7/4} + e^2\right)\cdot\frac{1}{4}}$$