- 1. (REVIEW)
 - (a) Find the most general antiderivative of $f(x) = \sqrt{2} e^x + 4\cos x$.

(b) Find g(x) if $g'(x) = \sqrt{2} - e^x + 4\cos x$ and $g(\pi) = 1$.

(c) If g'(x) represented velocity, what is g(x)? What would g(0) mean? g(2)?

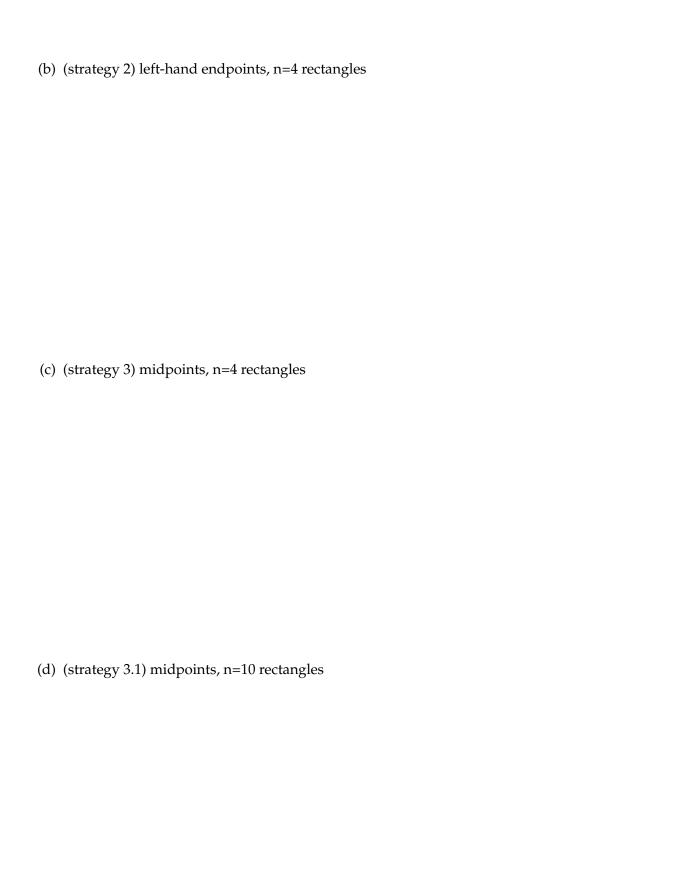
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2. Goal of this next part is to estimate the area under the curve $y = \frac{1}{2}x^2 + 1$ and above the x-axis on the interval [0,2].

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(a) (strategy 1) right-hand endpoints, n=4 rectangles

Section 5-1



2 Section 5-1

3. Suppose the odometer on our car is broken and we want to estimate the distance driven over a 1.5 hour time period. We take speedometer readings every 15 minutes and then record them in the table below. Estimate the distance traveled by the car. What method are you using?

Time (minutes)	0	15	30	45	60	75	90
Velocity (mi/h)	17	21	24	29	32	31	28

4. Oil leaked out of a tank at a rate of r(t) liters per hour. The rate decreased as time passed and values of the rate at 2 hour time intervals are shown in the table. Estimate how much oil leaked out. What method are you using? Is it an overestimate or an underestimate.

t (h)	0	2	4	6	8	10
r(t) (L/h)	8.7	7.6	6.8	6.2	5.7	5.3

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