

Math 152 Quiz #1 Answers

1. Antiderivative of $g'(x)$: $g(x) = 2e^x - 2x^3 - \cos x + C$

Finding C: $g(0) = 2e^0 - 2(0)^3 - \cos 0 + C = 3 \Rightarrow 2 - 1 + C = 3 \Rightarrow C = 2$

Answer: $g(x) = 2e^x - 2x^3 - \cos x + 2$

2. $\sum_{j=2}^6 \tan(j\pi) = \tan(2\pi) + \tan(3\pi) + \tan(4\pi) + \tan(5\pi) + \tan(6\pi) = 0$

(since $\tan(k\pi) = 0$ for integers k)

3. Distance traveled $\approx 3(4) + 2.5(4) + 2(4) + 1(4)$ (or $4[3 + 2.5 + 2 + 1]$)
 $= 34$ feet

4. Using area formulas for rectangles and triangles, we have that $\int_{-2}^8 f(t) dt = (\text{Area above the } x\text{-axis}) -$
(Area below the x -axis)
 $= 8 - 4$
 $= 4$