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13. Find f if $f''(\theta) = \sin(\theta) + \cos(\theta)$, $f(0) = 3$, and $f'(0) = 4$.

$$f' = -\cos\theta + \sin\theta + C$$

8 pts

$$f'(0) = -1 + C = 4 \rightarrow C = 5$$

$$f' = -\cos\theta + \sin\theta + 5$$

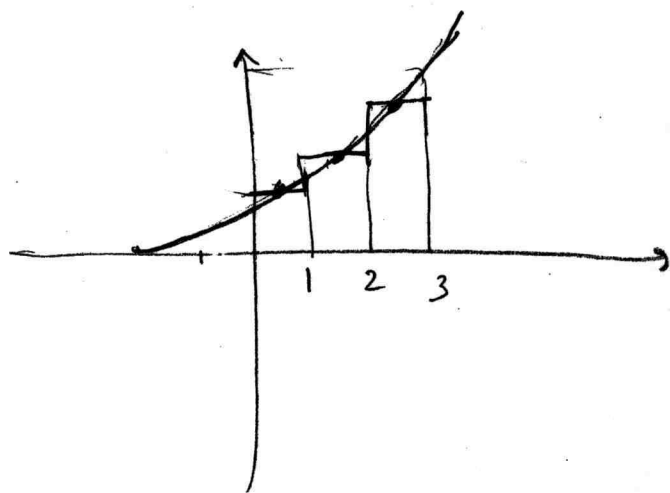
$$f = -\sin\theta - \cos\theta + 5\theta + D$$

$$f(0) = -1 + D = 3 \rightarrow D = 4$$

$$f = -\sin\theta - \cos\theta + 5\theta + 4.$$

14. If $f(x) = (x+2)^2$, $0 \leq x \leq 3$, find the Riemann sum with $n = 3$, taking the sample points to be midpoints. (You do not need to do arithmetic of fractions to simplify your answer.)

6 pts



$$\begin{aligned} & f(1/2) \cdot 1 + f(3/2) \cdot 1 + f(5/2) \cdot 1 \\ & = \left(\frac{5}{2}\right)^2 + \left(\frac{7}{2}\right)^2 + \left(\frac{9}{2}\right)^2 \end{aligned}$$