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$$A(2) = 4$$

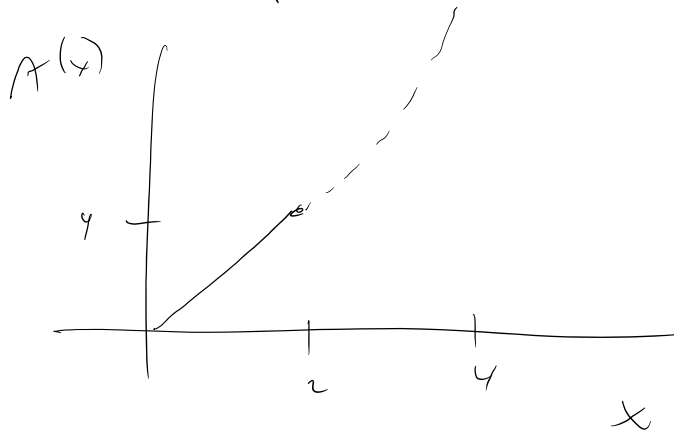
$$A'(x) = f(x)$$

$$A(3) = 6.5$$

$$A'(2) = f(2) = 2$$

$$A'(3) = f(3) = 3$$

$$A(x) = \begin{cases} 2x, & x \leq 2 \\ \frac{1}{2}x^2 + 2, & x > 2 \end{cases}$$

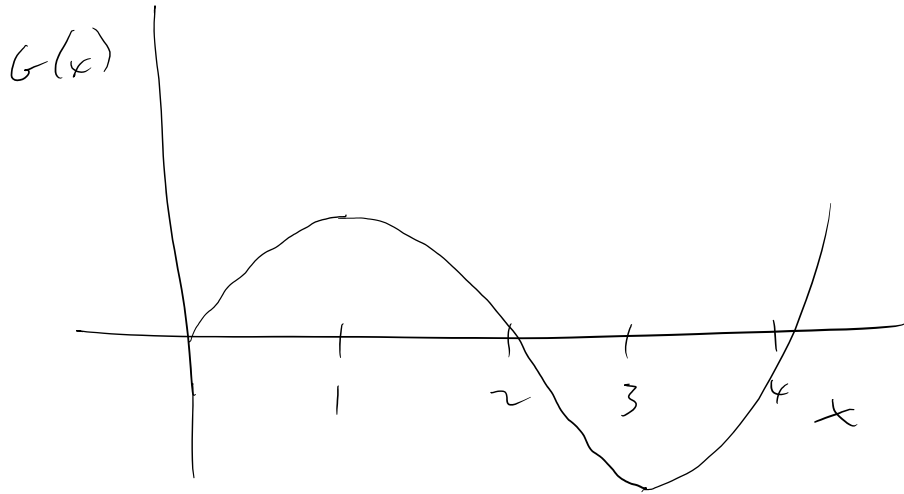
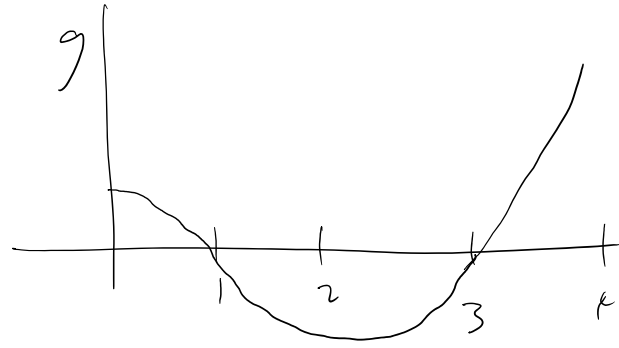


$$\int x \, dx$$

$$\frac{1}{2}x^2 + C$$

$$4 = \frac{1}{2}(2)^2 + C$$

(25) $G(x) = \int_0^x g(t) dt$



$$H(x) = \int_1^x \cos t^2 dt$$

$$\text{Find } H'(x) = \frac{d}{dx} \int_1^x \cos t^2 dt = \cos x^2$$

$$\begin{aligned} \text{Find } H'(x^3) &= \frac{d}{dx} \int_1^{x^3} \cos t^2 dt \\ &= \cos x^6 \cdot 3x^2 \end{aligned}$$

$$I(x) = \int_{\pi}^x e^{2t} dt$$

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$$\text{Find } I'(x) = \frac{d}{dx} \int_{\pi}^x e^{2t} dt = e^{2x}$$

$$\text{Find } I'(\tan x) = \frac{d}{dx} \int_{\frac{\pi}{4}}^{\tan x} e^{2t} dt$$

$$= e^{2 \tan x} \cdot \sec^2 x$$