

3. [5 points] Suppose A is a differentiable function defined for all real numbers.

The function A has all of the following properties:

- A is an even function.
- $\int_{-2}^2 A(x) dx = 5$.
- $A'(2) = 5$.
- The average value of A on the interval $[2, 4]$ is $5/2$.

Based on the properties above, circle all of the statements below that must be true.

Circle “NONE OF THESE” if none of the statements must be true.

You must circle at least one choice to receive any credit for this problem. No credit will be awarded for unclear markings. No justification is necessary.

- i. $A'(-2) = 5$.
- ii. $\int_0^2 A(x) dx = 5$.
- iii. $\int_2^4 A(x) dx - \int_{-2}^{-4} A(x) dx = 0$.
- iv. $\int_{-2}^2 xA'(x) dx = 4A(2) - 5$.
- v. The function R defined by $R(x) = \int_{-x}^x A'(t) dt$ must be a constant function.
- vi. NONE OF THESE