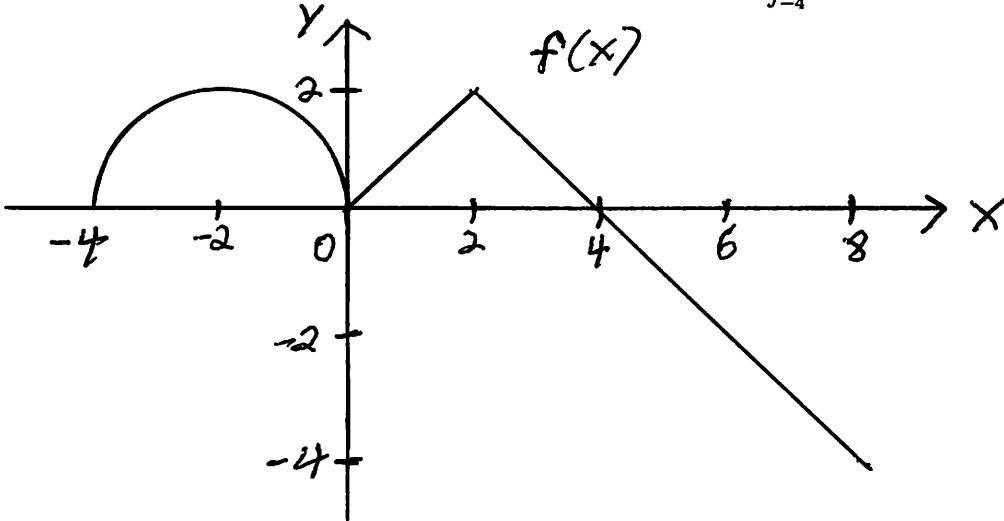


Name _____

- You have 15 minutes
- No calculators
- Show sufficient work

1. (3 points) The graph of $f(x)$ is shown below. Evaluate $\int_{-4}^8 f(x) dx$.



2. (3 points) Evaluate the following definite integral. Simplify your answer.

$$\int_1^9 \frac{1}{2x} dx$$

3. (4 points) Evaluate the following indefinite integrals.

(a) $\int \frac{x^4 + 16}{x^2} dx$

(b) $\int 12 \csc(2x) \tan x dx$