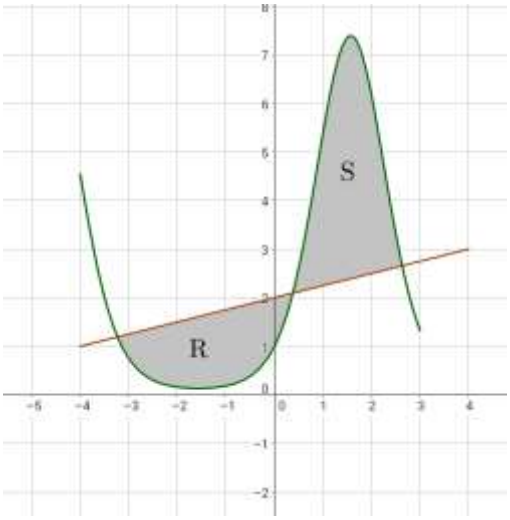
I-A4b CALC OK Last Q3 Practice Assessment

1. Let $f(x) = e^{2\sin x}$ and $g(x) = \frac{1}{4}x + 2$ be the boundaries of the regions R and S. Find the total area of R and S.



I-U7 NO CALC

Given $\int_0^5 f(x)\,dx = 10$ $\int_5^7 f(x)\,dx = 3$ $\int_{-2}^5 f(x)dx = -2$ Find each of the following:

2. $\int_7^{-2} f(x)\,dx$

3. $\int_0^{-2} f(x)dx$

I-U4 NO CALC

Let $f(x) = \int_{-4}^{x^2} 4t^2 - 4t + 1\,dt$.

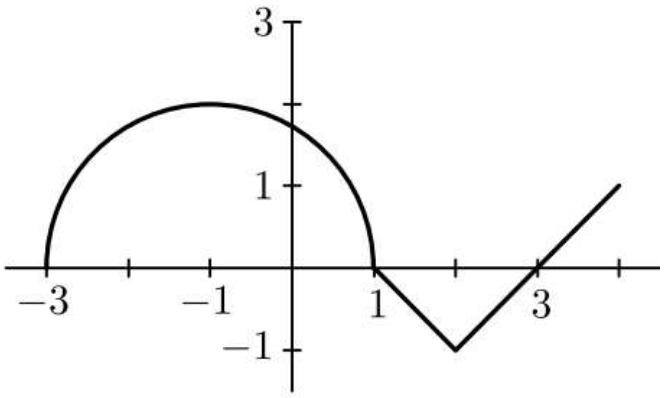
4. Find $f'(x)$. Simplify your answer.

5. Find all intervals where $f(x)$ is decreasing. Justify your answer.

I-U9 NO CALC

The function *a(t)* is shown over [-3,4] and consists of line segments and a semicircle.

Let $Q(x) = \int_1^x a(t)\,dt$

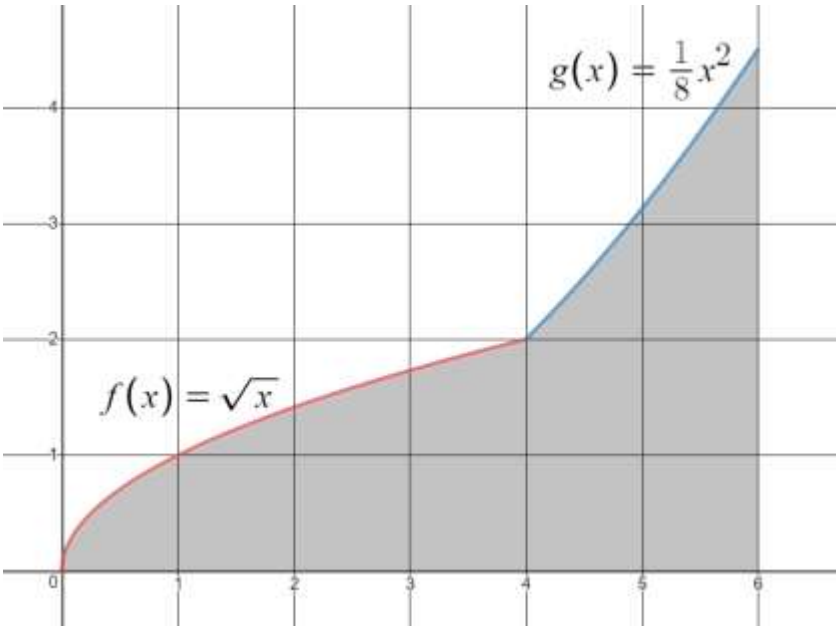


6. Find $Q(-1)$, $Q'(2)$, and $Q''(3)$.

7. Find the relative minima of $Q(x)$, if any, over [-3,4]. Justify your answer.

8. Find where $Q(x)$ has an absolute minimum value on $[-3,4]$. Show all calculations.

9. Find the area of the shaded region. Show all work.



10. Find the area of the shaded region. Show all work.