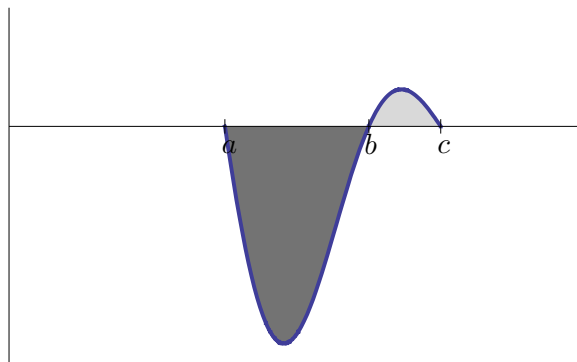


6. (7 points) The derivative of a continuous function  $g$  is given by

$$g'(x) = \frac{e^{-2x}(x+2)(x-3)^2}{(x-5)^{1/3}}.$$

Determine all critical points of  $g$ , and classify each as a local maximum, a local minimum, or neither. Carefully explain your reasoning for each classification.

7. (8 points) Use the following figure, which shows a graph of  $f(x)$ , to find each of the indicated integrals, given that the first area (with the darker shading) is 12 units and the second area is (with the lighter shading) is 3 units.



(a)  $\int_a^b f(x) dx$  \_\_\_\_\_

(b)  $\int_a^c |f(x)| dx$  \_\_\_\_\_

(c)  $\int_c^a f(x) dx$  \_\_\_\_\_

(d)  $\int_a^c 2(f(x) + 3) dx$  \_\_\_\_\_