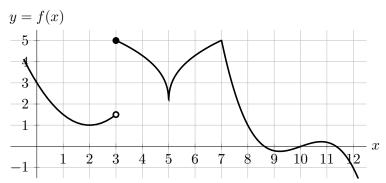
6. [4 points] The graph of the function f(x) is shown below. Note that f(x) has a vertical tangent line at x = 5.



a. [2 points] On which of the following intervals does the function f(x) satisfy the hypotheses of the Mean Value Theorem? Circle the correct answer(s).

[0,2]

[1,3]

[2,4]

[3,5]

NONE OF THESE

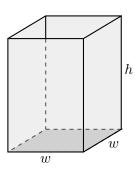
b. [2 points] On the interval [8, 12] the hypotheses of the Mean Value Theorem are true for the function f(x). What does the conclusion of this theorem say in this interval? **Answer:**

7. [5 points]

Yi is constructing a cardboard box. The base of the box will be a square of width w inches. The height of the box will be h inches. Yi will use gray cardboard for the sides of the box and brown cardboard for the bottom (the box does not have a top). Gray cardboard costs \$0.05 per square inch, while brown cardboard costs \$0.03 per square inch. Yi wants to spend \$20 on the cardboard for his box.

on the cardboard for his box.

Write a formula for h in terms of w.



Answer: *h* = _____