**Intermediate Value Theorem** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Big D and Puff Daddy Math Publications Class\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. f is a continuous function

f(0) = 5 and f(3) = 10

Which of the following is guaranteed by the intermediate value theorem?

1. f(c) = 6 for at least one c between 5 and 10
2. f(c) = 2 for at least one c between 0 and 3
3. f(c) = 2 for at least one c between 5 and 10
4. f(c) = 6 for at least one c between 0 and 3

 2) For the equation

f(x) = $(x-3)^{2}+3$, in the interval [3,5], and y = 4

Explain why the intermediate value theorem works and show this graphically, then find a value of c in the corresponding interval that is exactly equal to the given y value



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