QUIZ 7.1 – 7.2

NO Calculator Section

**Multiple Choices:**

1. What is the area of the region bounded by the graphs of and ?  
     
   A) B) C) D)
2. The figure below shows the graphs of and .  
   What is the area of the shaded region?  
    A graph of a line and a line

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   A) B) 10 C) D)
3. Which integral gives the area A of the region bounded by the graph of and the tangent line to the graph of *f* at ?

A) B) C) D)

**Free Response Questions:**

1. Determine the area of the shaded region: [3]

A graph of a function

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1. Sketch the region bounded by the graphs of and for and determine an integral that represents the area of the enclosed region (without evaluating it). [2]

Calculator section

1. A tank contains 125 gallons of heating oil at time .   
   During the time interval hours, heating oil is pumped into the tank at the rate: gallons per hour.  
   During the same time interval, heating oil is removed from the tank at the rate:   
    gallons per hour.  
   a) How many gallons of heating oil are pumped into the tank during the time interval hours?  
    [2]  
     
     
     
   b) Is the level of heating oil in the tank rising or falling at time hours? Justify. [2]  
     
     
     
     
     
     
   c) How many gallons of heating oil are in the tank at time hours? [2]  
     
     
     
     
     
   d) At what time , for , is the volume of heating oil in the tank the least? Show the analysis that leads to your conclusion. [2]
2. The graphs of and are given. Determine the area of the shaded region (show all your work. You can only simplify the final calculation with your calculator): [2]

A graph of a function

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