

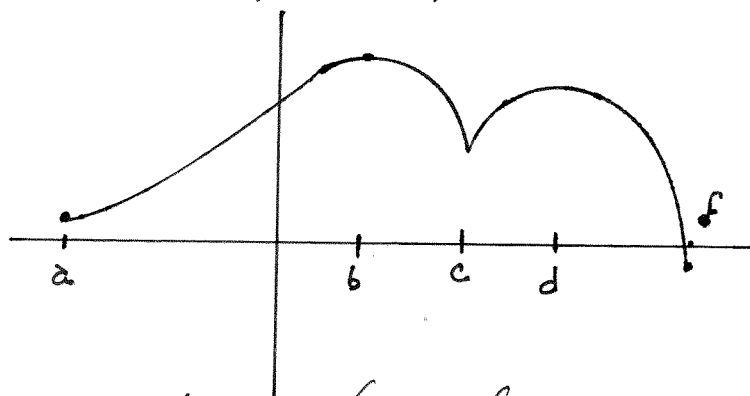
MATH 160 SESSION #24 PRACTICE EXERCISES

1. A cost function is given by $C(x) = 0.01x^3 - x^2 + 50x + 100$ where x is the number of items produced and $C(x)$ is the cost in dollars to produce x items.

(a) Specify the marginal cost for any x .

(b) Find $C'(20)$ and write an interpretation of what is happening.

2. Consider the graph of a function f shown below.



On what intervals is f increasing?

On what intervals is f decreasing?

On what intervals is $f'(x) < 0$?

On what intervals is $f'(x) > 0$?

Where is $f'(x) = 0$? Where does $f'(x)$ not exist?

3. Use calculus to determine where $f'(x) = 0$ if $f(x) = x^3 - 75x$. Sketch a graph of f and sketch in the tangents to the graph where $x = 5$ and where $x = -1$. Find the equations of those tangent lines.