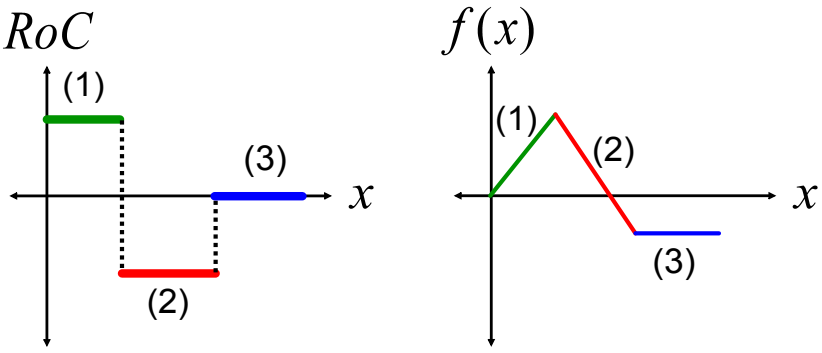
Graphical Models for Rates of Change

(1) For a positive rate of change (positive slope), the function is increasing.

(2) For a negative rate of change (negative slope), the function is decreasing.

(3) For zero rate of change (zero slope, horizontal line), the function is constant.



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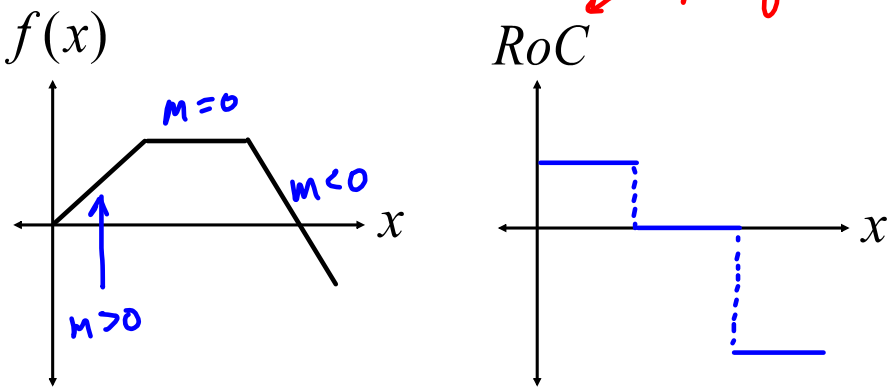
Graphical Models for Rates of Change

Ex.1 For each situation, sketch the graph for the original function and the rate of change.

(a) function increasing at a constant rate, then constant, then decreasing at a constant rate



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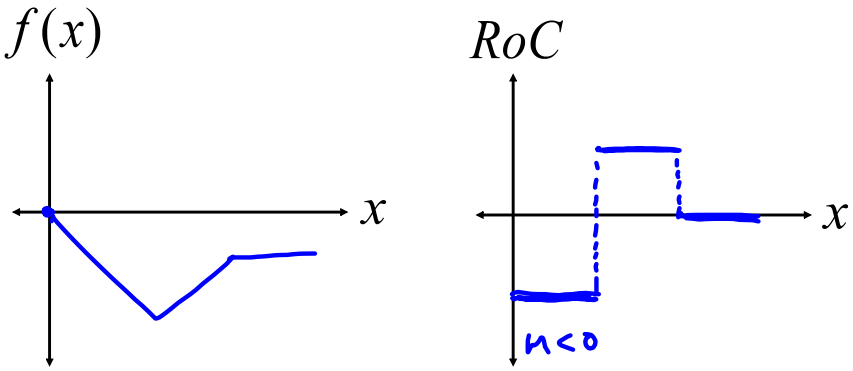
(b) rate of change constant and negative, then constant and positive, then zero



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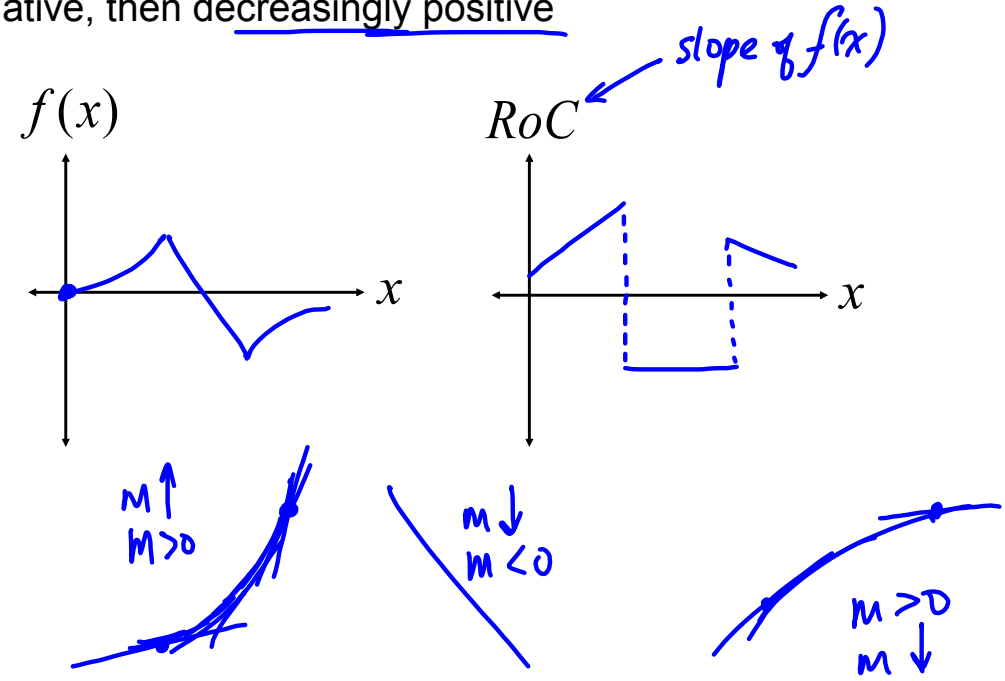
(c) rate of change increasingly positive, then constant and negative, then decreasingly positive



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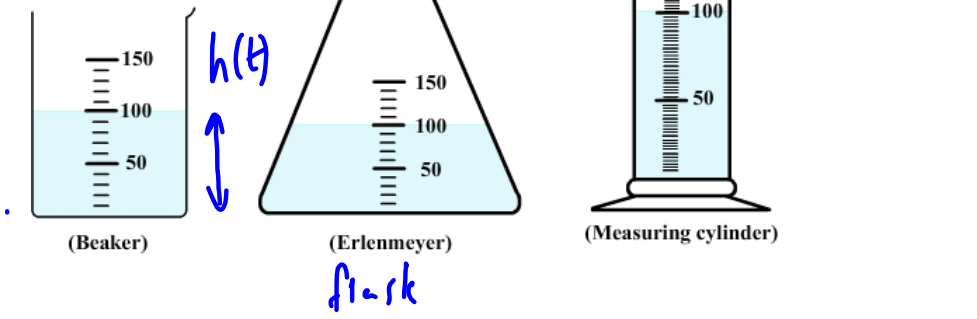
Ex. Water flows at a constant rate from a tap to fill a beaker, cylinder, and flask.

(a) Draw a rate of change in water level vs time graph for each container.

(b) Draw a water level h(t) vs time graph for each.



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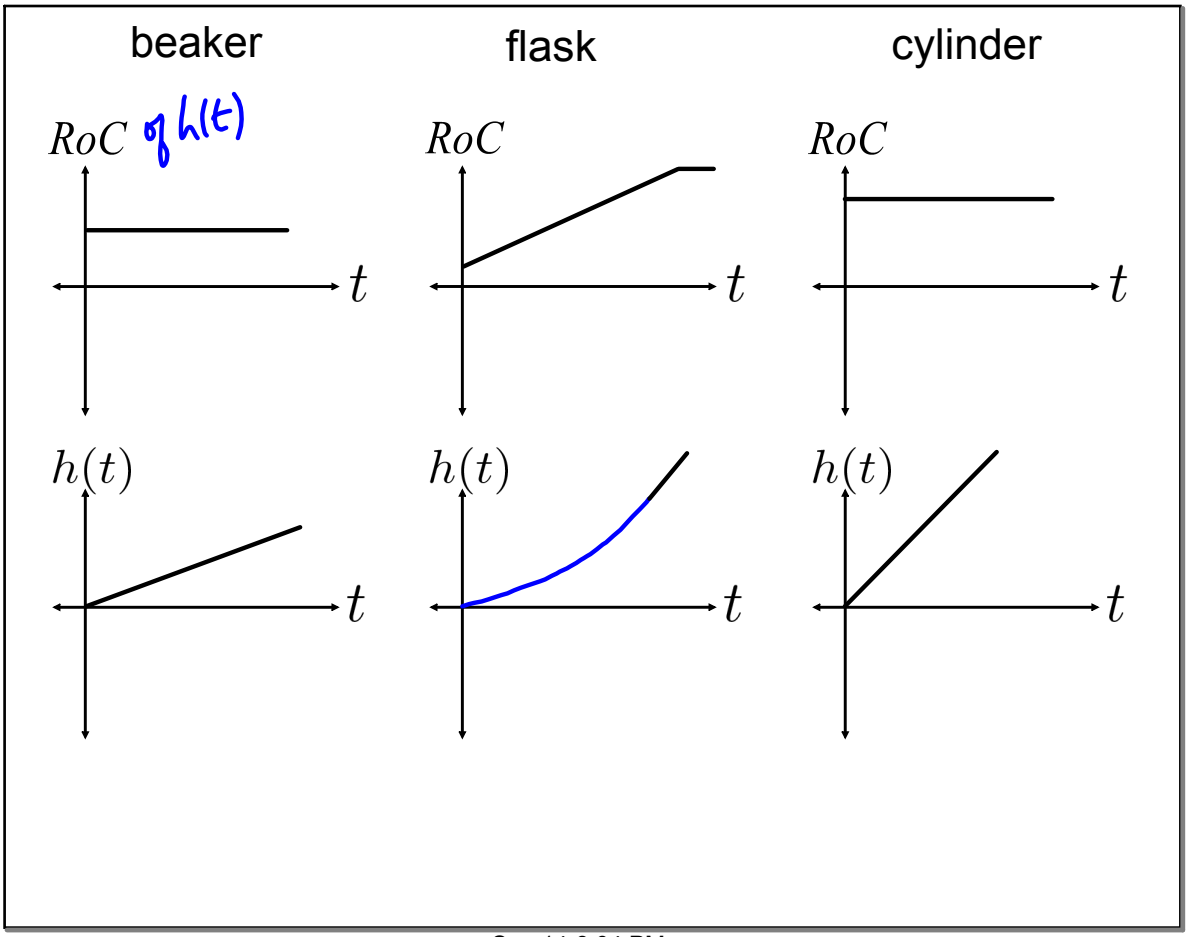

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Assigned Work:

p.103 # 3, 5, 9, 10 *
p.111 # 2, 10, 13

extra practice

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