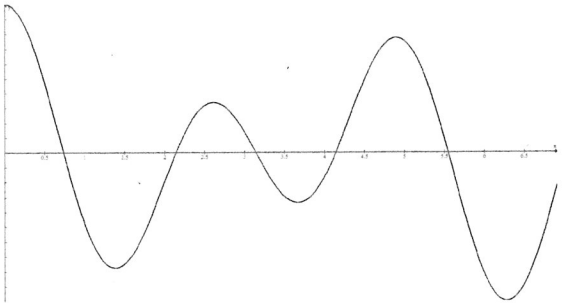
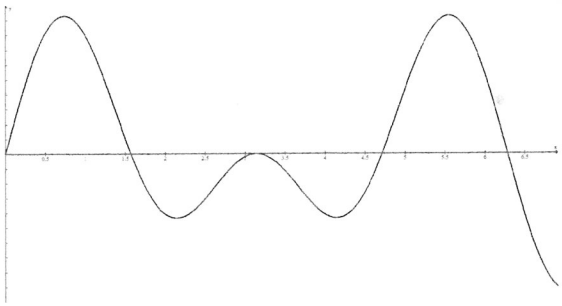
Calculus BC Study Guide: 3.3 – 3.6

Name:

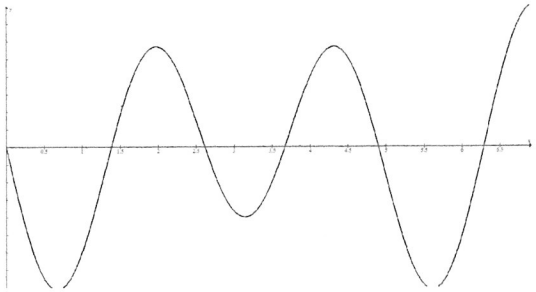
Shown below are f(x), $f'(x)$ and $f''(x)$. Label each graph.



f'



f



f''

Galileo's equation for the position s(t) of a freely-falling object (neglecting air resistance):
$s(t) = s_0 + v_0t - 0.5gt^2$
A snowball is thrown from the top of a 100-foot-tall building. The snowball is thrown upward with a velocity of 32 ft/s at time t = 0. (Use $g = 32$ ft/s^2)

a) What is the maximum height above the ground, in feet, that the snowball reaches?

$s = 100 + 32t - 16t^2$

$v = 32 - 32t$

$32 - 32t = 0$

$t = 1$

$s(1) = 100 + 32 - 16 = 116$

A) 116 B) 124 C) 134 D) 108 E) 140