

### AP Calc Multiple Choice

- ① C    ② D    ③ B    ④ B    ⑤ C  
⑥ D    ⑦ E    ⑧ C    ⑨ E    ⑩ B    ⑪ A  
⑫ D    ⑬ D    ⑭ E

#4 on FR

$$s(t) = -16t^2 + 220$$

$$s(1) = 204$$

$$x_0 = 1$$

$$\lim_{h \rightarrow 0} \frac{f(x_0+h) - f(x_0)}{h}$$

$$\begin{aligned} s(h+1) &= -16(h+1)^2 + 220 \\ s(h+1) &= -16(h^2 + 2h + 1) + 220 \\ &= -16h^2 - 32h - 16 + 220 \\ &= -16h^2 - 32h + 204 \end{aligned}$$

$$\lim_{h \rightarrow 0} \frac{s(1+h) - s(1)}{h}$$

$$\lim_{h \rightarrow 0} \frac{-16h^2 - 32h + 204 - 204}{h}$$

$$\lim_{h \rightarrow 0} \frac{-16h(h+2)}{h}$$

$$\lim_{h \rightarrow 0} -16(h+2)$$

$$= \boxed{-32 \text{ ft/sec}}$$