

10/20/14

Pop Quiz

$$1. \lim_{\Delta x \rightarrow 0} \frac{\sqrt{16 - (x+\Delta x)^2} - \sqrt{16 - x^2}}{\Delta x}$$

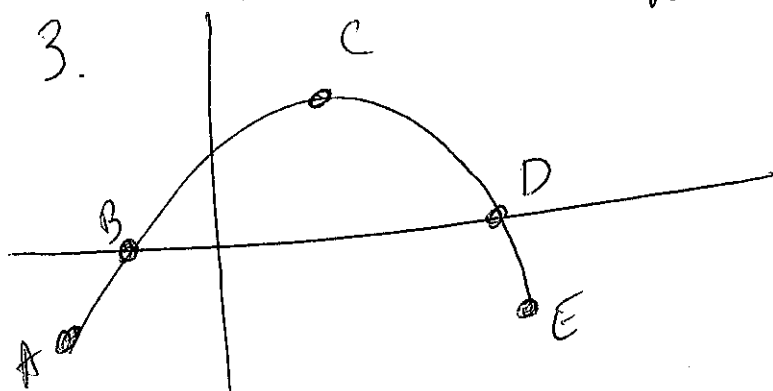
$$\frac{-2x}{2\sqrt{16-x^2}}$$

$$\frac{-x}{\sqrt{16-x^2}}$$

$$2. \frac{d}{dx} [\sqrt{x^3}]_{x=2} = \frac{3x^2}{2\sqrt{x^3}} = \frac{12}{2\sqrt{8}} = \frac{12}{4\sqrt{2}} = \frac{3}{\sqrt{2}}$$

$$\frac{6}{\sqrt{8}} \cdot \frac{6\sqrt{8}}{8} = \frac{3}{\sqrt{2}}$$

3.



$f(x) < 0$

and $f'(x) > 0$? (A, B)

$$4. \frac{d}{dx} [\cos^4(5x)] = 4\cos^3(5x)(-\sin 5x) \cdot 5 = -20\cos^3 5x \sin 5x$$

$$5. \frac{d}{dx} [(x^2 - 9x)^{15}]$$

$$15(x^2 - 9x)^{14} (2x - 9)$$