

Math 1121
Homework # 20
#14, #31

#14 $f(x) = .5e^{x^2}$

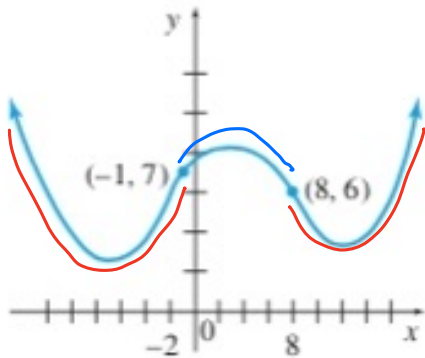
$$f'(x) = .5e^{x^2} \cdot 2x = xe^{x^2}$$

$$f''(x) = xe^{x^2} \cdot 2x + e^{x^2} \cdot 1$$

$$f''(0) = 0e^0 \cdot 2 \cdot 0 + e^0 \cdot 1 = 1$$

$$f''(2) = 2e^2 \cdot 2 \cdot 2 + e^2 \cdot 1 = 9e^4$$

31.



Concave up: $(-\infty, -1)$ & $(8, \infty)$

Concave down: $(-1, 8)$