Calculus

Name: Date:

3C.1 Exercises

Concavity and The 2nd Derivative

Find the Points of Inflection and the Intervals of Concavity

19. $f(x) = \frac{1}{2}x^4 + 2x^3$

21. $f(x) = x^3 - 6x^2 + 12x$

23. $f(x) = \frac{1}{4}x^4 - 2x^2$

25. $f(x) = x(x - 4)^3$

27. $f(x) = x\sqrt{x + 3}$

31. $f(x) = \sin\frac{x}{2}, \quad [0, 4\pi]$

35. $f(x) = 2\sin x + \sin 2x, \quad [0, 2\pi]$

Larson section 3.4

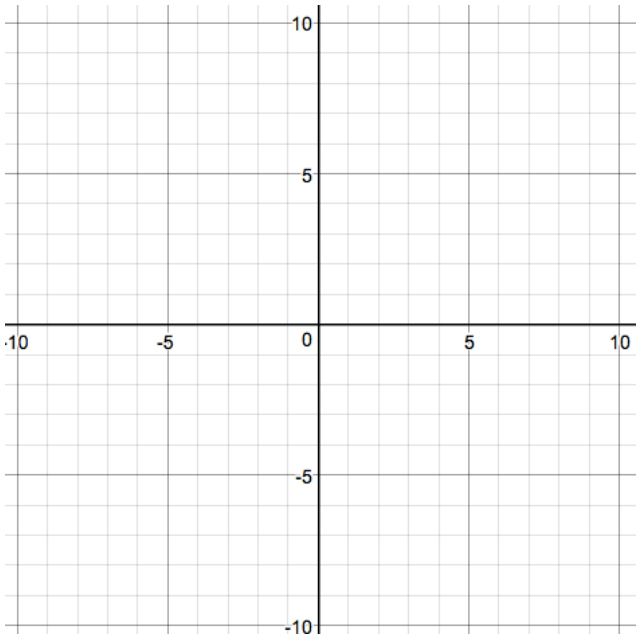
65. $f(2) = f(4) = 0$

$f'(x) < 0$ if $x < 3$

$f'(3)$ does not exist.

$f'(x) > 0$ if $x > 3$

$f''(x) < 0, x \neq 3$



67. $f(2) = f(4) = 0$

$f'(x) > 0$ if $x < 3$

$f'(3)$ does not exist.

$f'(x) < 0$ if $x > 3$

$f''(x) > 0, x \neq 3$