

MATH 144 Fall 2008
Exam 2 Review Solutions

1. Critical Points: (0,1) (2,-3)

2. relative mins at (-1,1) and (1,1)

relative max at (0,2)

Points of inflection at $(1/\sqrt{3}, 13/9)$ and $(-1/\sqrt{3}, 13/9)$

3. (0,0) is a relative maximum and $(2, 7/5)$ is a relative minimum

4. 5 units

5. Horizontal Asymptotes at $y=0$

No Vertical asymptotes.

Critical Points at (0,0) (1,2) and (-1,2)

6. $\frac{10x-9}{5x^2-9x+61}$

7. $y' = \frac{1}{x+3} - \frac{1}{x-3}$

8. $y' = e^{6x^2-7x}(12x - 7)$

9. $y' = 4xe^{5x} + (2x^2 + 1)5e^{5x}$

10. $y' = 15(e^{8x} + 3x)^{14}(8e^{8x} + 3)$

11. 12 feet by 10 feet

\$240

12. $\frac{dy}{dx} = \frac{-2x^3}{3y^2}$

13. $\frac{dy}{dx} = \frac{y-5}{6y-x}$

14. $y = 4x - 7$

15. Note that $\frac{dy}{dt} = 4$. $\frac{dx}{dt} = 12$

16. $\frac{dr}{dt} = \frac{43}{10\pi}$