Answer Key for  
Spring 2003 Final Exam -- Math 1142

Multiple Choice Questions

1. D
2. A
3. C
4. D
5. C
6. B
7. B
8. B
9. A
10. a) $x = 0, x = 3$
    b) relative minimum at $x = 3$
    c) interval of increase: $(3, \infty)$
    d) upward concavity: $(-\infty, 0)$ and $(0, 3)$
    e) see graph below
11. a) $\frac{dy}{dx} = \frac{3y - 2x}{3y^2 - 3x}$
    b) $(y - 1) = \frac{1}{3}(x - 2)$ or $y = \frac{1}{3}x + \frac{1}{3}$
12. $\frac{1}{2}$
13. $v(t) = -(e^{t/10}) \cdot t^3 \cdot \left(\frac{1}{10}t - 2\right)$, which is positive for $0 \leq t \leq 10$; $x(0) = 0$
14. a) 25/6
    b) not covered in the present course
15. not covered in the present course

Written Problems

graph for #10(e) --