

Summer 2003 Math 151 Exam 3
Test Form B
Answers

1. D
2. A
3. D
4. B
5. A
6. D
7. C
8. B
9. B
10. D
11. E
12. (a) 137°F
(b) 116 minutes
13. (a) Increasing: $(-1, 1)$, Decreasing: $(-\infty, -1)$ and $(1, \infty)$
(b) Local Min at $x = -1$, Local Max at $x = 1$
(c) Concave Up: $(-\sqrt{3}, 0)$ and $(\sqrt{3}, \infty)$, Concave Down: $(-\infty, -\sqrt{3})$ and $(0, \sqrt{3})$
(d) $x = 0, \sqrt{3}, -\sqrt{3}$
14. (a) $-\frac{1}{6}$
(b) 1
15. 2ft^3
16. $\mathbf{v}(t) = \langle 3t^3 - 4t^2 + 7, \frac{5}{2}t^2 + 3t - 2 \rangle$
17. (a) $y' = \frac{1}{1+(\frac{x}{5})^2} \left(\frac{1}{5}\right) + \frac{1}{\sqrt{\frac{x-5}{x+5}}} \left[\frac{1}{2} \left(\frac{x-5}{x+5}\right)^{-1/2} \left(\frac{(x+5)(1)-(x-5)(1)}{(x+5)^2}\right) \right]$
(b) $y' = (\sin x)^{\sqrt{x}} \left(\sqrt{x} \cot x + \frac{\ln(\sin x)}{2\sqrt{x}} \right)$