Answers to practice problems for Calculus I Test II
(most of which are probably correct)

10. $\dfrac{-7}{(3+x)^2}$

14. $-\sec(x)\sin(\tan(x))$

16. $\dfrac{3}{\sqrt{2x+1}} - \dfrac{3x-2}{(2x+1)^{3/2}}$

18. $\sqrt{7}(1-2x^{-3})(x+x^{-2})^{\sqrt{7}-1}$

20. $\cos(\cos(x)) - \sin(x)$

22. $-(\sin(x-\sin(x)))^{-2}(1-\cos(x))\cos(x-\sin(x))$

24. $2x\sec(1+x^2)\tan(1+x^2)$

26. $y' = \dfrac{y - 2x\cos(y)}{2\cos(2y) - x^2\sin(y) - x}$

28. $-\frac{1}{3}(x+\sqrt{x})^{-4/3}(1+\frac{1}{2\sqrt{x}})$

30. $\dfrac{\cos(\sqrt{x})}{4\sqrt{x\sin(\sqrt{x})}}$

32. $\dfrac{4(x+\lambda)^3(x^4+\lambda^4) - 4x^3(x+\lambda)^4}{(x^4+\lambda^4)^2}$

34. $\dfrac{mx\cos(mx) - \sin(mx)}{x^2}$

36. $y' = \dfrac{-\tan(y)}{x\sec^2(y) - 1}$

38. $\dfrac{(2x-5)(x^2-5x+6) - (2x-5)(x^2-5x+4)}{(x^2-5x+6)^2}$

40. $\sqrt{3} - \frac{\pi}{12}$

46. $y = -1$

48. $y = -\frac{4}{5}x + \frac{13}{5}$

52. $\left(\sqrt{\dfrac{2}{3}}, -\sqrt{\dfrac{1}{6}}\right), \left(-\sqrt{\dfrac{2}{3}}, \sqrt{\dfrac{1}{6}}\right)$

54a. $\sin(2x) = 2\sin(x)\cos(x)$

70. $v(t) = \dfrac{c^2}{2\sqrt{b^2+c^2t^2}},\ a(t) = -\dfrac{c^4}{4}(b^2+c^2t^2)^{-3/2}$

42. Unless I'm really screwing up, these aren't orthogonal.

46. $y' = \dfrac{y^2-x^2}{2xy}$ and $y' = \dfrac{2xy}{x^2-y^2}$

48. $y' = 3y/x$ and $y' = -x/3y$