

**Math 152, Spring 2008, Partial Answers to
Review Problems for Midterm 2**

(1) (a) $\frac{1}{2}(2\sqrt{5}-\sqrt{2}+\ln(2+\sqrt{5})-\ln(1+\sqrt{2}))$ (b) $\frac{\pi}{27}((1+9\cdot 8^4)^{3/2}-(1+9\cdot 7^4)^{3/2})$

(2) (a) $x - x^3 + x^5 - x^7$ (b) $\frac{1}{12,000,000}$

(3) (a) $y = \frac{1+x}{1-x}$ (b) $y = Ce^{x^2/2}$

(4) $(20 + 40(4/3)^{1/2})^0 C$

(5) (a) 10 (b) $\frac{1}{e}$

(6) (a) $-\frac{8}{9\cdot 49} - \frac{1}{8\cdot 49}$ (b) $\frac{1}{\sqrt{5}}$

(7) diverges converges converges converges

converges converges diverges converges converges

(8) (a) $\left[3 - \frac{1}{5}, 3 + \frac{1}{5}\right)$

(9) (a) $1 + \frac{x^2}{2} + \frac{5x^4}{24}$

(10) (a) $\sum_{n=0}^{\infty} \frac{2 \cdot 3^{2n} x^{2n}}{(2n)!}$ (b) $\sum_{n=0}^{\infty} \frac{(-1)^n x^{10n+3}}{(2n)!}$

(11) (a) $1 + \frac{x^2}{2} + \frac{3x^4}{8}$ (b) $x + \frac{x^3}{6} + \frac{3x^5}{40}$