

Math 181

Monday, March 15

Review

Exam: + C = Donuts

7.5.2

$$\int \frac{x^2 + 3x - 45}{(x+3)(x+10)(3x-3)}$$

$$\frac{x^2 + 3x - 45}{(x+3)(x+10)(3x-3)} = \frac{A}{x+3} + \frac{B}{x+10} + \frac{C}{3x-3}$$

$$x^2 + 3x - 45 = A(x+10)(3x-3) + B(x+3)(3x-3) + C(x+3)(x+10)$$

$$= A(3x^2 + 27x - 30) + B(3x^2 + 6x - 9) + C(x^2 + 13x + 30)$$

$$= (3A + 3B + C)x^2 + (27A + 6B + 13C)x + (-30A - 9B + 30C)$$

Thu - Exam 2

Thu - 10.3 (WW)

Fri - 10.3 / 10.4

Mon - 10.4

BYOB Pets

Last Friday:

3/14 1:59 Pi Day

$$\begin{aligned} 3A + 3B + C &= 1 \\ 27A + 6B + 3C &= 3 \\ -30A - 9B + 30C &= -45 \end{aligned}$$

$$A = 0.53$$

$$B = 0.10$$

$$C = -0.93$$

$$A = 2$$

$$\int = \int \frac{0.53}{x+3} + \frac{0.10}{x+10} + \frac{-0.93}{3x-3} dx$$

$$= 0.53 \ln|x+3| + 0.10 \ln|x+10| + (-0.93) \frac{1}{3} \ln|3x-3| + C$$

$$\left( \frac{\sqrt{8}}{9801} \sum_{n=0}^{\infty} \frac{(4n)!}{(n!)^4} \frac{1103 + 26390n}{396^{4n}} \right)^{-1} \approx \pi$$

$$\sum_{n=0}^{\infty}$$

$$= \frac{9801}{4412} \sqrt{2} = 3.141592$$

$$\sum_{n=0}^3$$

$\approx 40$  digit accuracy