Homework #16

Yves Mosoale

4.8 #6

The Group

(6) $f(x) = \frac{1}{3}x^3 + \frac{1}{2}x^2 + 3 \qquad x_1 = -3$

$f'(x) = x^2 + x$

$$x_2 = \frac{-3 - \frac{1}{3}(-3)^3 + \frac{1}{2}(-3)^2 + 3}{(-3)^2 - 3}$$

$$= \frac{-3 + 9 + 4.5 + 3}{6}$$

$x_2 = 2.25$

$$x_3 = \frac{2.25 - \frac{1}{3}(2.25)^3 + \frac{1}{2}(2.25)^2 + 3}{(2.25)^2 + 2.25}$$

$$= \frac{2.25 - 3.796875 + 2.53125 + 3}{7.3125}$$

$x_3 = .5449$

EMPIRE   Fabian Best

Laquan Drummer

4.8 #8

$$X_{n+1} = X_n - \frac{f(x_n)}{f'(x_n)}$$

$$X^5 + 2 = 0 \qquad \frac{x^5+2}{5x^4}$$

$x_1 = -1$

$$-1 - \frac{(-1)^5 + 2}{5(-1)^4} = -1.2$$

$x_2 = -1.2$

$$-1.2 - \frac{(-1.2)^5 + 2}{5(-1.2)^4} = -1.1529$$

$x_3 = -1.1529$

$$-1.1529 - \frac{(-1.1529)^5 + 2}{5(-1.1529)^4} = -1.1487$$

x

W.W.V

Letrice
Wilgen
Viviene.

4/21/2010

4.8

#36

$f(x) = x\cos x$

$0 \leq x \leq \pi$

$f'(x) = \cos x + x(-\sin(x))$

$f'(x) = \cos x - x\sin x$

$x = \pi$

$f(\pi) = \pi\cos\pi = \pi(-1) = -\pi$

$f'(\pi) = \cos\pi - \pi\sin\pi = (-1) - \pi(0)$

$f'(\pi) = -1$

Newton's Method.

$y_1 = x\cos x$

$x_1 = x - \dfrac{f(x)}{f'(x)} = \pi - \dfrac{-\pi}{-1} = \pi - (+\pi)$

$= \pi - \pi = 0$

$x_2 = x_1 - \dfrac{f(x_1)}{f'(x_1)}$

$= 0 - \dfrac{0\cos(0)}{\cos(0) - 0\sin(0)}$

$= 0 - \dfrac{0}{1-0} = 0 - 0$

$x_2 = 0$

$x_3 = 0$

$x_4 = 0.$

Team Kickass

4.9

#4

$f(x) = 8x^9 - 3x^6 + 12x^3$

Anti-derivative

$F(x) = \frac{8x^{10}}{10} - \frac{3x^7}{7} + \frac{12x^4}{4} + C$

$F(x) = \frac{4x^{10}}{5} - \frac{3x^7}{7} + \frac{3x^4}{1} + C$

use derivative to prove it is correct

$F'(x) \ \frac{40x^9}{5} - \frac{21x^6}{7} + \frac{12x^3}{1} + 0$

$F'(x) = 8x^9 - 3x^6 + 12x^3$

Bianca
Stan
Max

TEAM: C.A.M.

SECTION 4.9

#8

$$f(x) = 2x + 3x^{1.7}$$

$$F(x) = \frac{2x^{2}}{2} + \frac{3x^{2.7}}{2.7} + C$$

CASANDRA LUCERO

Augustin Osocotisan

Majar Khosbeija

4.9

#10

$$f(x) = \sqrt[4]{(x)^3} + \sqrt[3]{(x)^4}$$

$$F(x) = \frac{x^{7/4}}{7/4} + \frac{x^{7/3}}{7/3} + C$$

~~F(x) = .5714285714 + .4285714285...~~

~~F(x) = 4x~~

The New Group

Michael Schies

FR3CH

4.9 Homework

14) $f(x) = 3e^x + 7\sec^2 x$

rule : $\frac{x^{n+1}}{n+1}$

$= 3e^x + 7\tan x$

Mike
Toan
Vinh

SECTION 4.9

TEXT PG. 345

CIVARC

J. KOHLHEPP

S. MONCE

R. D'SOUZA

PROB. 16 FIND THE MOST GENERAL ANTIDERIVATIVE.

$$g(\theta) = \cos\theta - 5\sin\theta$$

$$\Rightarrow G(\theta) = \sin\theta - 5(-\cos\theta) + C$$

$$* \Rightarrow G(\theta) = \sin\theta + 5\cos\theta + C$$

$g(\theta) = \sin\theta$

$G(\theta) = -\cos\theta$

$G'(\theta) = \sin\theta$

anti: $G(\theta) = -\cos\theta + C$

$-\cos\theta = \sin\theta$

Will Arbito

B.A is B.S

18 $e^x = 3 - 2x \quad y = 0$

$f(x) = 3 - 2x - e^x \quad \Big| \; -2 - e^x \; - f'(x)$

$= \dfrac{3 - 2x - e^x}{-2 - e^x}$

$= .6666666276$

$= .5954695309$

$= .5944053287$

$= .5942049585$

4.9

find f

#24

Tieyun
Pablo
Sam

$f'' = 2 + x^3 + x^6$

$2x + \frac{x^4}{4} + \frac{x^7}{7}$

$\frac{2x^2}{2} + \frac{x^5}{20} \frac{x^8}{56} + C_1x + C_2$

$= x^2 + \frac{x^5}{20} + \frac{x^8}{56} + C_1 + C_2$

GRUNDLE

PUMPKINS

We Love Math

Stephania
Krystina
Jessica

4.9

30 $f'(x) = 8x^3 - 12x + 3, \quad f(1) = 6$

$f(x) = \frac{8x^4}{4} - \frac{12x^2}{2} + 3x + C$

$f(x) = 2x^4 - 6x^2 + 3x + C$

$f(1) = 2(1)^4 - 6(1)^2 + 3(1) + C$

$f(1) = 2 + 6 + 3 + C$

$11 + C = 6$

$C = -5$

$f(x) = 2x^4 + 6x^2 + 3x - 5$

April 21, 2010

Diesel

Tyler Feest   Connor Payne   Stanley Tuchez

Sec. 4.9 #37

Find $F(x)$

$f'(x) = \sqrt{x}\,(6+5x) \quad f(1) = 10$

$f'(x) = x^{1/2}(6+5x)$

$f'(x) = 6x^{1/2} + 5x^{3/2}$

$F(x) = 4x^{3/2} + 2x^{5/2} + C$

$F'(1) = 4(1)^{3/2} + 2(1)^{5/2} + C = 10$

$F'(1) = 6 + C = 10$

$C = 4$

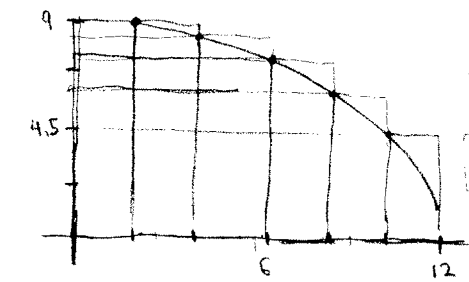
$F(x) = 4x^{3/2} + 2x^{5/2} + 4$

MAT151... Team α 4/20/10

5.1) #2

a.) use 6 rectangles to find est. of ea. type for the area under the given graph of (f) from x=0 & x=12:

(i) L_6



$A = 9(2) + 9(2) + 8(2) + 7.5(2) + 5.5(2) + 4.5(2)$

$= 18 + 18 + 16 + 15 + 11 + 9$

$\boxed{= 87}$

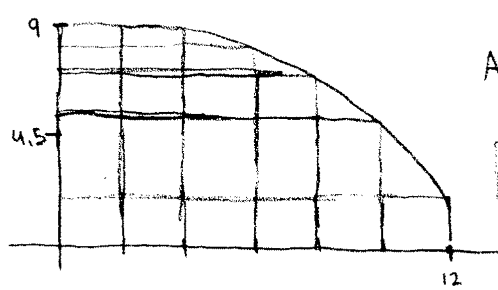
(ii.) M_6

$A = 9(2) + 9(2) + 8(2) + 7(2) + 6(2) + 3.75(2)$

$= 18 + 18 + 16 + 14 + 12 + 7.5$

$\boxed{= 85.5}$

(iii) R_6



$A = 9(2) + 9(2) + 8.25(2) + 7(2) + 5.63(2) + 2.25(2)$

$= 18 + 18 + 16.5 + 14 + 11.26 + 4.5$

$\boxed{= 82.26}$

b.) L_6 is an overestimate

c.) R_6 is an underestimate

d.) M_6 is the closest approx. the actual area because its rectangles have the least deviation.

Mike Cunkling

Jonathan Chen

Pythagorus

12. $g(x) = \dfrac{5 - 4x^3 + 2x^6}{x^6}$

$= (5 - 4x^3 + 2x^6)x^{-6}$

$= 5x^{-6} - 4x^{-3} + 2$

$= \dfrac{5x^{-5}}{-5} - \left(\dfrac{4x^{-2}}{-2}\right) + \dfrac{2x}{1} + C$

$= -x^{-5} + 2x^{-2} + 2x + C$

n