

Problem # 1 answer (2 pts):

$$\frac{\sin^{-1}\left(\sqrt{\frac{2}{3}}(x+1)\right)}{\sqrt{2}} + C$$

C not necessary

Problem # 2 answer (2 pts):

$$\frac{1}{(x+1)^2}$$

Problem # 3 answer (2 pts):

$$y = C + e^{-x}$$

any letter for C

Problem # 4 answer:

(a) (2 pts)

$$\frac{dy}{dt} = \frac{.05}{1000} - \frac{3y}{1000-2t}$$

(b) (2 pt)

$$y = \frac{(.05)}{1000}(1000-2t) - \frac{.04(1000-2t)^{3/2}}{1000^{3/2}}$$

Problem # 5 answer (2 pts):

$$4/15$$

Problem # 6 answer (1 pts):

$$8$$

Problem # 7 answer (2 pt):

$$\pi/16$$

Problem # 8 answer (1 pts):

$$\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right) = \left(\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}\right)$$

Problem # 9 answer (2 pt):

$$\sqrt{2} - 1/2$$

Problem # 10 answer (2 pts):

$$(\theta, r) = \left(\frac{\pi}{4}, \frac{\pi^2}{16}\right)$$

Problem # 11 answer:

(a) (2 pts) $\sum_{n=0}^{\infty} \frac{x^{2n+1}}{(2n+1)!}$ or $x + \frac{x^3}{3!} + \frac{x^5}{5!} + \dots$

(b) (1 pt)

all x

(c) (1 pt)

~~1.6667~~ 1.1667

(d) (2 pts)

.0085 or .0086
or .0087 but not .0083 or .0084

Problem # 12 answer:

(a) (1 pt)

1.016

(b) (2 pts)

.006

Problem # 13 answer:

(a) (2 pts)

0

(b) (2 pts)

$(x-1)^3$

Problem # 14 answer (2 pts):

$x^2/2$

Problem # 15 answer:

(a) (2 pts)

$2 + \frac{(x-8)}{12} - \frac{(x-8)^2}{3^2 2^5}$

— 2/3 1/4 e

(b) (1 pt)

2.153

(c) (2 pts)

.004