Quiz 2

● Graded

Student

Starlan Davis

Total Points

7 / 10 pts

Question 1

(no title) **5** / 6 pts

1.1 **(no title)** **2** / 2 pts

✔ **– 0 pts** Correct

– 1.5 pts Click here to replace this description.

– 1 pt Click here to replace this description.

– 2 pts Click here to replace this description.

1.2 **(no title)** **2** / 2 pts

✔ **– 0 pts** Correct

– 2 pts Click here to replace this description.

1.3 **(no title)** **1** / 2 pts

– 0 pts Correct

✔ **– 1 pt** Click here to replace this description.

– 2 pts Click here to replace this description.

Question 2

(no title) **2** / 4 pts

– 0 pts Correct

– 4 pts Click here to replace this description.

– 1 pt Click here to replace this description.

✔ **– 2 pts** Click here to replace this description.

– 3 pts Click here to replace this description.

Quiz 2: Section / Time : 555 / 0800

Name : Starlan Davis Net ID : cdavis10

1) Differentiate the functions:

a) $y = e^{\sqrt{3x+5}}$ $f'(g(x)) \cdot g'(x)$ $e^{(3x+5)^{\frac{1}{2}}} \times \frac{3}{2}(3x+5)^{-\frac{1}{2}} = \frac{3}{2}(3x+5)^{-\frac{1}{2}} e^{(3x+5)^{\frac{1}{2}}}$

$f = e^u \quad f' = e^u$
$u = t^{\frac{1}{2}} \quad u' = \frac{1}{2}t^{-\frac{1}{2}}$
$t = 3x+5 \quad t' = 3$

$\frac{1}{2}(3x+5)^{-\frac{1}{2}} \times 3 = \frac{3}{2}(3x+5)^{-\frac{1}{2}} = u'$

b) $y = (3x+4)^8$

$f'(g(x)) * g'(x)$
$f = u^8 \quad f' = 8u^7$
$u = 3x+4 \quad u' = 3$

$8(3x+4)^7 \cdot 3 = 24(3x+4)^7$

c) $y = \sin(x^3 - 2x + e^2)$

$f = \sin(u) \quad f' = \cos(u)$
$u = x^3 - 2x + e^2 \quad u' = 3x^2 - 2 + e^2$

$\cos(x^3 - 2x + e^2) \cdot (3x^2 - 2 + e^2)$
$= (3x^2 - 2 + e^2)\cos(x^3 - 2x + e^2)$

2) A spherical ballon is being inflated by a compressor that is pumping air at a rate of 4.3 ft^3/min. At what rate is the radius of the ballon increasing when the radius is 1.5 ft. $V = \frac{4}{3}\pi r^3$

round to 2 decimal places

$\frac{d}{dt}(\frac{4}{3}\pi r^3) = 3r^2$

$3(1.5)^2 = 6.75$

$3(1.5)^2(\frac{4}{3}\pi) = 28.26 \ ft^3/min$

$f = \frac{4}{3}\pi \quad f' = 0$
$g = r^3 \quad g' = 3r^2$

$0(r^3) + 3r^2(\frac{4}{3}\pi)$