WEEK 7 Homework

Question 1

$x^8 + c$.

Question 2.

$$2x - \frac{2}{7}x^{7/2} + c.$$

Question 3.

$$12x + 3x^7 - 3x^2 + c.$$

OR

$$12x - 3x^2 + 3x^7 + c.$$

Question 4.

$$-\frac{1}{x} - \frac{3}{2x^2} + c.$$

OR

$$-x^{-1} - \frac{3}{2}x^{-2} + c.$$

Question 5.

$f(x) = 18x^5 - 20x^3$

Question 6.

$$15x^2 \, dx.$$

OR

$$15x^2 \, dx.$$

Question 7.

(a) NA

(b) $\frac{1}{8}(3x^3+19)^8 + C$.

The power rule cannot be used to evaluate Integral (a) because if we substitute $u=(2x^2-4)^5$, it's derivative does not completely divide with the second term, as in integral (b)

Question 8.

$$\frac{1}{5}(7x^3+15)^5 + C.$$

Question 9.

$$\frac{1}{5}(3x^2-7x)^5 + C$$

Question 10.

$$3\left(\frac{x^8}{8} + \frac{8x^5}{5} + 8x^2\right) + C$$

Question 11

$$e^{7x} + C$$

Question 12.

$u = 0.1x$.

$du = (0.1)\,dx$

$40000e^{0.1x} + C$.

Question 13.

$\frac{1}{18} e^{6x^3} + C$

Question 14

$\frac{e^{4x}}{4} + 14e^{-\frac{x}{2}} + C$.

OR.

$\frac{e^{4x}}{4} + \frac{14}{e^{\frac{x}{2}}} + C$.

Question 15.

$\frac{1}{2} \ln|y^2 + 6| + C$