PRINTABLE VERSION

Quiz 4

= tan(2x+1) + C.

You scored 0 out of 100

Question 1

You did not answer the question.

Calculate the integral:

$$\frac{1}{2}\sec(2x+1)+C$$

$$-\frac{1}{2}\tan(2x+1)+C$$

$$\frac{1}{6} (\sec(2x+1))^{\frac{1}{2}} + 6$$

$$\frac{1}{2}\tan(2x+1)+C$$

Ouestion 2

You did not answer the question.

Calculate the integral

$$\int \frac{1}{2} \frac{\sec^2(x)}{\sqrt{\tan(x)+1}} dx$$

$$\int \frac{1}{2} \frac{\sec^2(x)}{\sqrt{\tan(x)+1}} dx$$

$$\int \frac{1}{2} \frac{dy}{\sqrt{\tan(x)+1}} = \int \frac{dy}{\sqrt{\tan(x)+1}} dx$$

d)
$$=$$
 $\frac{1}{2} \sec(x) + C$
e) $=$ $\frac{1}{2} \sqrt{\tan(x) + 1} + C$

Question 3

You did not answer the question.

Calculate the integral:

$$\int (\sec(2x+1))^{2} dx$$

$$\int \cot u = 2x+1, \quad du = 2dx \Rightarrow du = dx$$

$$\int \sec(u) du = \tan(u) + C$$

$$= \tan(2x+1) + C.$$

$$\int \cot u = \arctan(x)^{4} + C$$

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Question 4

Calculate the integral:

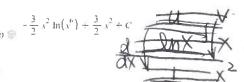
You did not answer the question.

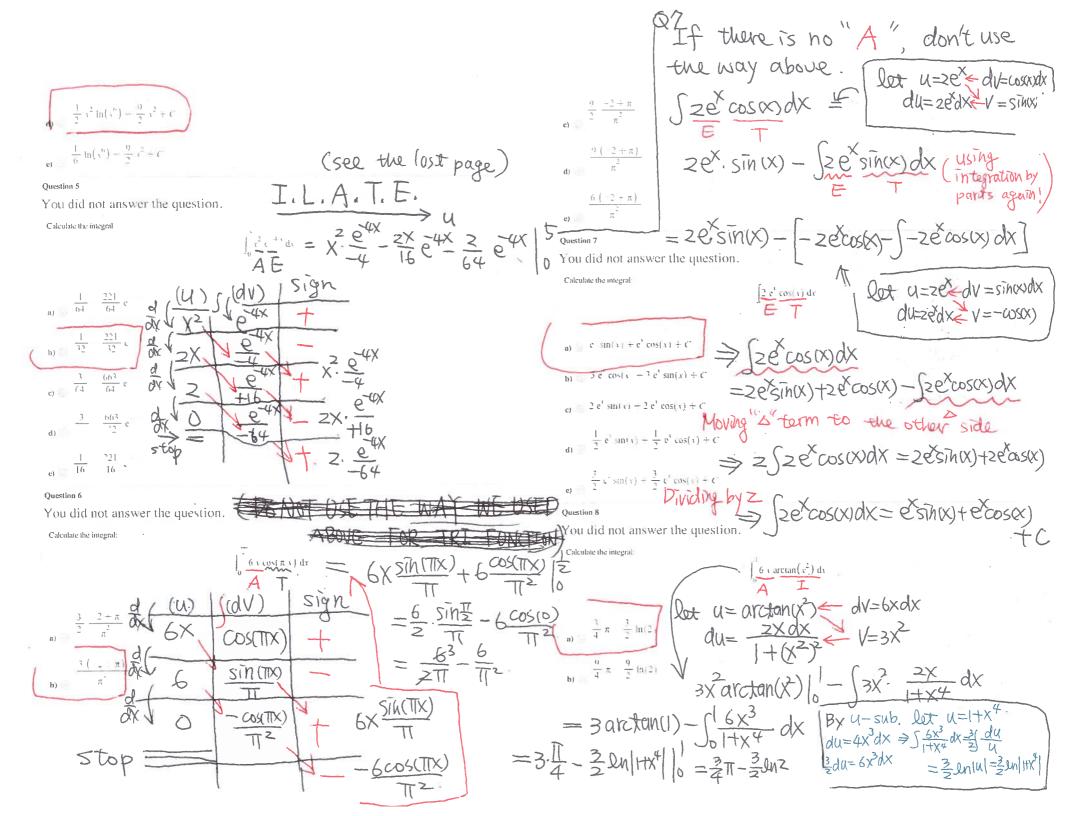
 $\int_{0}^{3x \ln(x^{6})} dx$

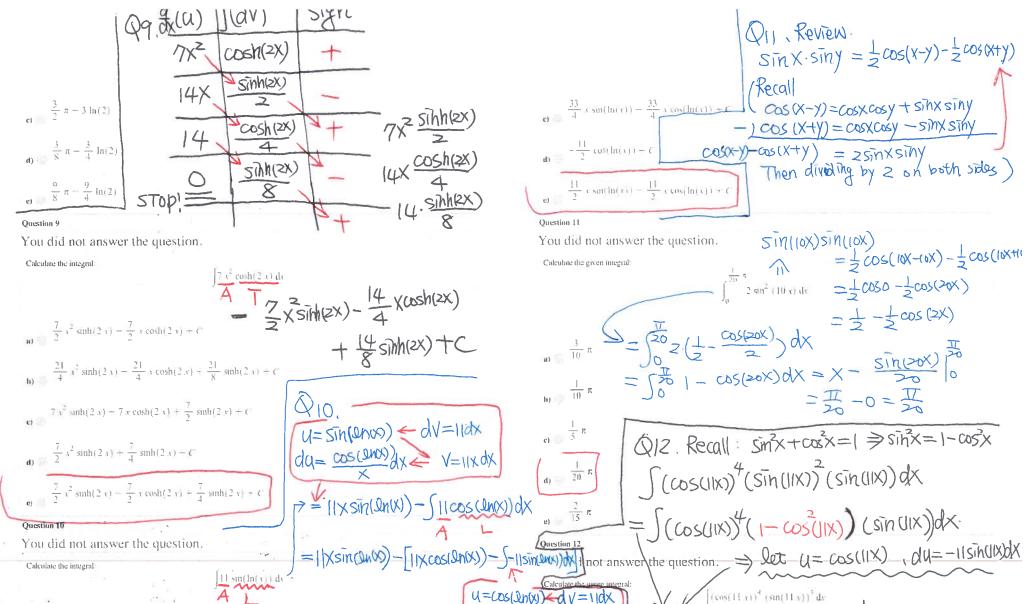
$$\frac{1}{2} \ln(x^6) + \frac{9}{2} x^2 + C$$

 $\int_{0}^{1/2} \ln(x^6) + \frac{9}{2}x^2 + c$ $\int_{0}^{1/2} 3x \cdot 6 \ln x \, dx = \frac{3}{2}x^2 \ln(x^6) + c$ Integration by parts!

$$\frac{3}{2} x^2 \ln(x^6) + C$$







du= -sin(anx)

a)
$$\equiv 11 \times \sin(\ln(v)) - 11 \times \cos(\ln(v)) + C$$
 $= 1/X \sin(\ln(x)) - 1/X \cos(\ln(x))$ due

b) $\equiv \frac{11}{2} \times \cos(\ln(x)) + \frac{11}{2} \times \sin(\ln(v)) + C$ $= 1/X \sin(\ln(x)) - 1/X \cos(\ln(x))$

Divide by
$$z$$

$$\Rightarrow \int ||sin(anx)|dx = \frac{11}{2} \times sin(anx) - \frac{11}{2} \times cos(anx) + C$$

$$= \int_{-\frac{1}{77}}^{\frac{1}{77}} (\sin(11x))^{3} dx$$

$$= \int_{-\frac{1}{77}}^{\frac{1}{77}} (\sin(11x))^{7} + C$$

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$$= -\frac{1}{11} \int u^{4} - u^{6} du = -\frac{1}{11} \cdot \left[\frac{u^{5} - u^{7}}{5} \right] + C$$

$$= -\frac{u^{5}}{15} + \frac{u^{7}}{77} + C = -\frac{(\cos(11x))^{5}}{55} + \frac{(\cos(1x))^{7}}{77} + C$$

$$\int_{\mathbf{b}_1} \frac{1}{55} (\cos(11x))^5 + \frac{1}{77} (\cos(11x))^7 + C$$

$$\frac{1}{c} = \frac{1}{132} (\cos(11x))^5 + C$$

$$\frac{1}{55} \left(\cos(11x) \right)^{\frac{1}{2}} = \frac{1}{77} \left(\cos(11x) \right)^{\frac{1}{2}} + \epsilon$$

$$-\frac{1}{5} (\cos(11x))^{\frac{3}{2}} + \frac{1}{7} (\cos(11x))^{\frac{7}{2}} + \overline{C}$$

Question 13

You did not answer the question.

Calculate the given integral

1 2 tan' (4 v) di

$$-\frac{2}{5}\sin^2(5x) + C$$

b) =
$$-2 \cot(5 r) + C$$

$$-\frac{2}{5}\sin(5x)\cos(5x) \pm C$$

$$\frac{2}{5}\cot(5x) + C$$

$$\frac{2}{e} \cot(5x) + C$$

Question 14

You did not answer the question

Calculate the given integral

$$\frac{1}{8} \tan^4 (4 y) + C$$

Q14, Recall:
$$tan^2x + 1 = sec^2x$$

 $\Rightarrow tan^2x = sec^2x - 1$
 $7 = 2 \int tan(4x) \cdot tan^2(4x) dx$
 $= 2 \int tan(4x) \int sec^2(4x) - tan(4x) dx$
 $= 2 \int tan(4x) \int sec^2(4x) - tan(4x) dx$
 $= 2 \cdot \frac{1}{2} \cdot \frac{1}{4} (tan(4x))^2 - 2 \cdot \frac{1}{4} \ln |sec(4x)| + C$

 $\frac{1}{4} \left(\frac{1}{4} an(4x)^2 - \frac{1}{2} ln |se(L4x)| + C \right)$

Q13 Recal

>2 (csc (5X) dX

d (cot (ax)) = -acs 2(ax)

 $\Rightarrow \int csc^2(ax)dx = -\frac{1}{n} \cot(ax)$

 $=2\cdot(-\frac{1}{5})\cot(x)+C$

 $=-\stackrel{<}{=}\cot(sx)+C$

$$\frac{1}{4}\tan^2(4x) = \frac{1}{2}\ln|\cos(4x)| + C$$

$$\frac{1}{8} \tan^4 (4x) - 8 \ln |\sin(4x)| = C$$

d)
$$= \frac{1}{4} \tan^2 (4x) + \frac{1}{2} \ln |\cos(4x)| + C$$

e)
$$\tan^2 (4 \text{ v}) + 2 \ln |\cos(4 \text{ v})| = 0$$

Ouestion 15

You did not answer the question.

Calculate the given integral

$$\frac{5}{34}\sin(8x) - \frac{5}{2}\sin(x) + C$$

$$\frac{-\frac{5}{2}\cos(8 \text{ c}) + \frac{5}{2}\cos(4) - \bar{c}}{}$$

c) =
$$-\frac{5}{2}\sin(17x) + \frac{5}{2}\cos(x) + C$$

d)
$$=\frac{3}{34}\cos(17x) + \frac{5}{2}\cos(x) + C$$

e)
$$= -\frac{5}{34} \sin(8x) + \frac{5}{2} \sin(x) + C$$

Question 16

You did not answer the question.

Calculate the given integral:

$$\frac{4}{3} \left(\ln(11 \, v) \right)^3 = C$$

Recall:

$$Sin \times cosy = \frac{1}{2} sin(x+y) + \frac{1}{2} sin(x-y)$$

$$= \frac{5}{2} \int \left[\sin(\pi x) + \sin(-x) \right] dx$$

$$= \frac{1}{2} \int \int Sin(7x) - Sin(x) dx$$

$$= \frac{1}{2} \int \int Sin(7x) - Sin(x) dx$$

$$=\frac{5}{2}\left[-\frac{\cos(17x)}{17}-(-\cos(x))\right]+C$$

$$=-\frac{5}{34}\cos(17x)+\frac{5}{2}\cos(x)+C$$

Q16,

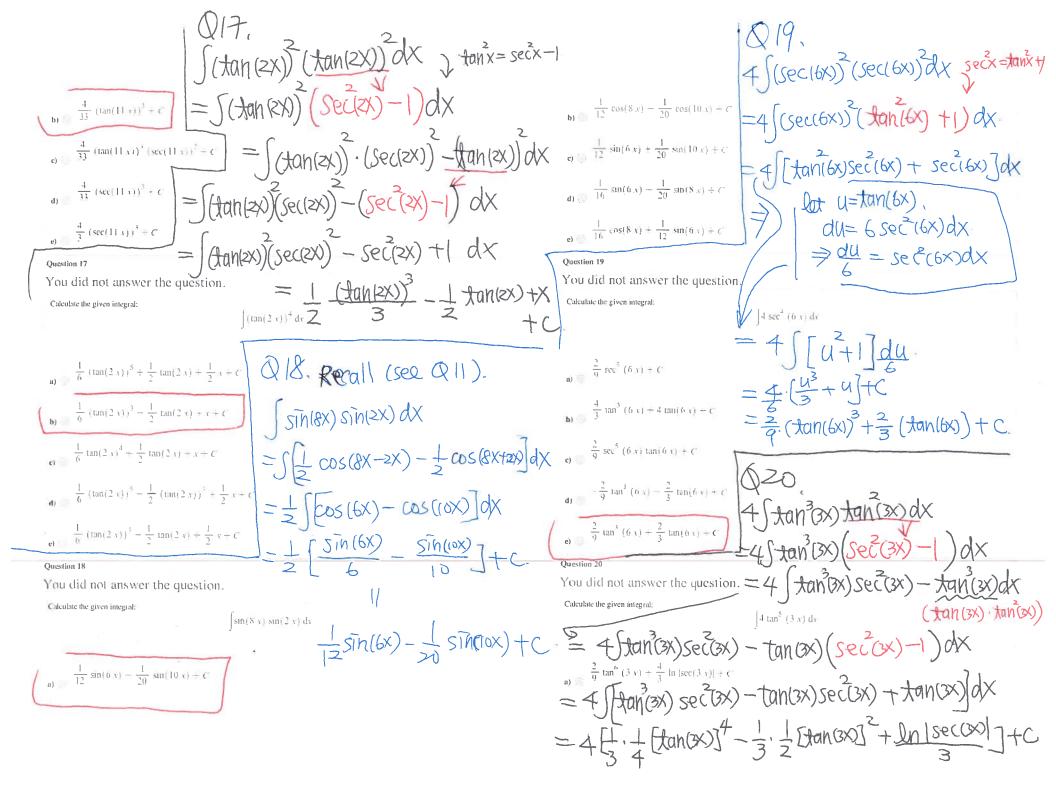
$$Qot u = tan(UX)$$
, $du = 1 | sec^2(UX) dx$
 $2 \Rightarrow \frac{dy}{U} = sec^2(UX) dx$

$$-\left(\frac{1}{2} \ln(11X)\right) \left(\frac{1}{2} \ln(11X)\right)^2 dX$$

=45 u2. du = 4 Sudu

$$\int_{0}^{4} (\tan(11.x))^{2} (\sec(11.x))^{2} dx = \frac{4}{11} \cdot \frac{4}{3} + C$$

$$=\frac{4}{33}\left(\frac{1}{3}\left(\frac{1}{3}\right)^{3}+C\right)$$



- **b)** $\Rightarrow \frac{1}{3} \tan^4 (3 \text{ s}) + \frac{4}{3} \ln |\sec(3 \text{ t})| + C$
- $\int_{C} \frac{1}{3} \tan^4 (3x) \frac{2}{3} \tan^2 (3x) + \frac{4}{3} \ln|\sec(3x)| + C$
- $\frac{4}{15}\tan^{\frac{4}{3}}(3\tau) + \frac{4}{3}\ln|\sec(3\tau)| + C$
- $\frac{2}{9} \tan^6 (3x) \frac{2}{3} \tan^2 (3x) + \frac{4}{3} \ln|\sec(3x)| + C$

Norse Tri. Algebraic fn.

L. A. T. E

Logarithmic fn. Thi. fn.