PRINTABLE VERSION

Quiz 4

You scored 0 out of 100

Question 1

You did not answer the question.

Calculate the integral:

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

let $u = 2x+1$. $du = 2dx \Rightarrow \frac{du}{2} = dx$

$\int \sec^2(u)\,du = \tan(u) + c$

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

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

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

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

d) $\frac{1}{6}(\sec(2x+1))^3 + C$

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

Question 2

You did not answer the question.

Calculate the integral:

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

let $u = \tan(x)+1$. $du = \sec^2(x)dx$

$\int \frac{1}{2}\frac{du}{\sqrt{u}} = \sqrt{u} + c$

$= \sqrt{\tan(x)+1} + c$

a) $4\sqrt{\tan(x)+1} + C$

b) $\boxed{\sqrt{\tan(x)+1} + C}$

c) $\frac{1}{4}\sec(x)^2 + C$

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:

$$\int \frac{4(\arcsin(x))^5}{\sqrt{1-x^2}}\,dx$$

let $u = \arcsin(x)$. $du = \frac{1}{\sqrt{1-x^2}}dx$

$\int 4u^5\,du = \frac{4}{6}u^6 + c$

$= \frac{2}{3}(\arcsin(x))^6 + c$

a) $\frac{1}{24}(\arcsin(x))^4 + C$

b) $\boxed{\frac{2}{3}(\arcsin(x))^6 + C}$

c) $\frac{1}{20}\sqrt{1-x^2} + C$

d) $\frac{2}{3}\sqrt{1-x^2} + C$

e) $(\arcsin(x))^4 + C$

Question 4

You did not answer the question.

Calculate the integral:

$$\int 3x\ln(x^6)\,dx$$

$\rightarrow \ln(x^6) = 6\ln x$

$\int 3x \cdot 6\ln x\,dx = 18\int x\ln x\,dx$

Integration by parts!

let $u = \ln x$, $dv = x\,dx$

$du = \frac{dx}{x}$, $v = \frac{x^2}{2}$

$= 18\left[\frac{x^2}{2}\ln x - \int \frac{x^2}{2}\frac{dx}{x}\right]$

$= 9x^2\ln x - \frac{18x^2}{4} + c.$

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

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

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

d) $\boxed{\frac{3}{2}x^2\ln(x^6) - \frac{9}{2}x^2 + C}$

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

Question 5

You did not answer the question.

Calculate the integral

(see the last page)

I.L.A.T.E. $\longrightarrow u$

$$\int_0^5 \underset{A}{x^2}\,\underset{E}{e^{-4x}}\,dx = x^2\frac{e^{-4x}}{-4} - \frac{2x}{16}e^{-4x} - \frac{2}{64}e^{-4x}\Big|_0^5$$

$\frac{d}{dx}$ (u)	$\int$ (dv)	sign
x^2	e^{-4x}	+
$2x$	$\frac{e^{-4x}}{-4}$	−
2	$\frac{e^{-4x}}{+16}$	+
0	$\frac{e^{-4x}}{-64}$	−
stop		+

$x^2\cdot\frac{e^{-4x}}{-4}$

$2x\cdot\frac{e^{-4x}}{+16}$

$2\cdot\frac{e^{-4x}}{-64}$

a) $\frac{1}{64} - \frac{221}{64}e$

b) $\boxed{\frac{1}{32} - \frac{221}{32}e}$

c) $\frac{3}{64} - \frac{663}{64}e$

d) $\frac{3}{32} - \frac{663}{32}e$

e) $\frac{1}{16} - \frac{221}{16}e$

Question 6

You did not answer the question.

~~DO NOT USE THE WAY WE USED ABOVE FOR TRI FUNCTION~~

Calculate the integral:

$$\int_0^{1/2} \underset{A}{6x}\,\underset{T}{\cos(\pi x)}\,dx = 6x\frac{\sin(\pi x)}{\pi} + 6\frac{\cos(\pi x)}{\pi^2}\Big|_0^{1/2}$$

$$= \frac{6}{2}\cdot\frac{\sin\frac{\pi}{2}}{\pi} - 6\frac{\cos(0)}{\pi^2}$$

$$= \frac{6^3}{2\pi} - \frac{6}{\pi^2}$$

$\frac{d}{dx}$ (u)	$\int$ (dV)	sign
$6x$	$\cos(\pi x)$	+
6	$\frac{\sin(\pi x)}{\pi}$	−
0	$\frac{-\cos(\pi x)}{\pi^2}$	+
Stop		−

$$\boxed{6x\frac{\sin(\pi x)}{\pi} \quad -\frac{6\cos(\pi x)}{\pi^2}}$$

a) $\frac{3}{2} - \frac{2+\pi}{\pi^2}$

b) $\boxed{\frac{3(-2+\pi)}{\pi^2}}$

c) $\frac{9}{2} - \frac{-2+\pi}{\pi^2}$

d) $\frac{9(-2+\pi)}{\pi^2}$

e) $\frac{6(-2+\pi)}{\pi^2}$

Q7 If there is no "A", don't use the way above.

$$\int \underset{E}{2e^x}\,\underset{T}{\cos(x)}\,dx$$

$\boxed{\begin{array}{l}\text{let } u = 2e^x \quad dv = \cos(x)dx \\ du = 2e^x dx \quad v = \sin(x)\end{array}}$

$$2e^x\cdot\sin(x) - \int \underset{E}{2e^x}\,\underset{T}{\sin(x)}\,dx$$

(using integration by parts again!)

$$= 2e^x\sin(x) - \left[-2e^x\cos(x) - \int -2e^x\cos(x)\,dx\right]$$

$\boxed{\begin{array}{l}\text{let } u = 2e^x \quad dv = \sin(x)dx \\ du = 2e^x dx \quad v = -\cos(x)\end{array}}$

Question 7

You did not answer the question.

Calculate the integral

$$\int \underset{E}{2e^x}\,\underset{T}{\cos(x)}\,dx$$

a) $\boxed{e^x\sin(x) + e^x\cos(x) + C}$

b) $3e^x\cos(x) - 3e^x\sin(x) + C$

c) $2e^x\sin(x) - 2e^x\cos(x) + C$

d) $\frac{1}{2}e^x\sin(x) - \frac{1}{2}e^x\cos(x) + C$

e) $\frac{3}{2}e^x\sin(x) + \frac{3}{2}e^x\cos(x) + C$

$$\Rightarrow \int 2e^x\cos(x)dx$$
$$= 2e^x\sin(x) + 2e^x\cos(x) - \int 2e^x\cos(x)dx$$

Moving "Δ" term to the other side

$$\Rightarrow 2\int 2e^x\cos(x)dx = 2e^x\sin(x) + 2e^x\cos(x)$$

Dividing by 2

$$\Rightarrow \int 2e^x\cos(x)dx = e^x\sin(x) + e^x\cos(x) + C$$

Question 8

You did not answer the question.

Calculate the integral:

$$\int_0^1 \underset{A}{6x}\,\underset{I}{\arctan(x^2)}\,dx$$

let $u = \arctan(x^2)$ $\quad dv = 6x\,dx$

$du = \frac{2x\,dx}{1+(x^2)^2}$ $\quad V = 3x^2$

$$3x^2\arctan(x^2)\Big|_0^1 - \int 3x^2\cdot\frac{2x}{1+x^4}dx$$

$$= 3\arctan(1) - \int_0^1 \frac{6x^3}{1+x^4}dx$$

$$= 3\cdot\frac{\pi}{4} - \frac{3}{2}\ln|1+x^4|\Big|_0^1 = \frac{3}{4}\pi - \frac{3}{2}\ln 2$$

By u-sub. let $u = 1+x^4$

$du = 4x^3dx \Rightarrow \int\frac{6x^3}{1+x^4}dx = \frac{3}{2}\int\frac{du}{u}$

$\frac{3}{2}du = 6x^3dx$

$= \frac{3}{2}\ln|u| = \frac{3}{2}\ln|1+x^4|$

a) $\boxed{\frac{3}{4}\pi - \frac{3}{2}\ln(2)}$

b) $\frac{9}{4}\pi - \frac{9}{2}\ln(2)$

c) $\frac{3}{2}\pi - 3\ln(2)$

d) $\frac{3}{8}\pi - \frac{3}{4}\ln(2)$

e) $\frac{9}{8}\pi - \frac{9}{4}\ln(2)$

Q9. $\frac{d}{dx}(u)$	$\int(dv)$	Sign
$7x^2$	$\cosh(2x)$	+
$14x$	$\frac{\sinh(2x)}{2}$	−
14	$\frac{\cosh(2x)}{4}$	+
0 STOP!	$\frac{\sinh(2x)}{8}$	−
		+

$7x^2\frac{\sinh(2x)}{2}$

$14x\frac{\cosh(2x)}{4}$

$14\cdot\frac{\sinh(2x)}{8}$

Question 9

You did not answer the question.

Calculate the integral:

$$\int 7x^2\cosh(2x)\,dx$$

A T

$$= \frac{7}{2}x^2\sinh(2x) - \frac{14}{4}x\cosh(2x) + \frac{14}{8}\sinh(2x) + C$$

a) $\frac{7}{2}x^2\sinh(2x) - \frac{7}{2}x\cosh(2x) + C$

b) $\frac{21}{4}x^2\sinh(2x) - \frac{21}{4}x\cosh(2x) + \frac{21}{8}\sinh(2x) + C$

c) $7x^2\sinh(2x) - 7x\cosh(2x) + \frac{7}{2}\sinh(2x) + C$

d) $\frac{7}{2}x^2\sinh(2x) + \frac{7}{4}\sinh(2x) + C$

e) $\frac{7}{2}x^2\sinh(2x) - \frac{7}{2}x\cosh(2x) + \frac{7}{4}\sinh(2x) + C$

Question 10

You did not answer the question.

Calculate the integral:

$$\int 11\sin(\ln(x))\,dx$$

A L

a) $11x\sin(\ln(x)) - 11x\cos(\ln(x)) + C$

b) $\frac{11}{2}x\cos(\ln(x)) + \frac{11}{2}x\sin(\ln(x)) + C$

Q10.

$u = \sin(\ln(x))$ ← $dv = 11dx$

$du = \frac{\cos(\ln(x))}{x}dx$ ← $v = 11x\,dx$

$= 11x\sin(\ln(x)) - \int 11\cos(\ln(x))\,dx$

A L

$= 11x\sin(\ln(x)) - [11x\cos(\ln(x)) - \int -11\sin(\ln(x))dx]$

$u = \cos(\ln(x))$ ← $dv = 11dx$

$du = \frac{-\sin(\ln(x))}{x}$ ← $V = 11x$

$-11x\sin(\ln(x)) - 11x\cos(\ln(x))$

$-\int 11\sin(\ln(x))dx$

Move this term to the other side

$\Rightarrow 2\int 11\sin(\ln(x))dx = 11x\sin(\ln(x)) - 11x\cos(\ln(x))$

Divide by 2

$\Rightarrow \int 11\sin(\ln(x))dx = \frac{11}{2}x\sin(\ln(x)) - \frac{11}{2}x\cos(\ln(x)) + C$

c) $\frac{33}{4}x\sin(\ln(x)) - \frac{33}{4}x\cos(\ln(x)) + C$

d) $-\frac{11}{2}\cos(\ln(x)) + C$

e) $\frac{11}{2}x\sin(\ln(x)) - \frac{11}{2}x\cos(\ln(x)) + C$

Q11. Review.

$\sin x\cdot\sin y = \frac{1}{2}\cos(x-y) - \frac{1}{2}\cos(x+y)$

(Recall

$\cos(x-y) = \cos x\cos y + \sin x\sin y$

$-)\ \cos(x+y) = \cos x\cos y - \sin x\sin y$

$\cos(x-y) - \cos(x+y) = 2\sin x\sin y$

Then dividing by 2 on both sides)

Question 11

You did not answer the question.

Calculate the given integral:

$$\int_0^{\frac{\pi}{20}} 2\sin^2(10x)\,dx$$

$\sin(10x)\sin(10x)$

$= \frac{1}{2}\cos(10x-10x) - \frac{1}{2}\cos(10x+10x)$

$= \frac{1}{2}\cos 0 - \frac{1}{2}\cos(20x)$

$= \frac{1}{2} - \frac{1}{2}\cos(2X)$

$= \int_0^{\frac{\pi}{20}} 2\left(\frac{1}{2} - \frac{\cos(20x)}{2}\right)dx$

$= \int_0^{\frac{\pi}{20}} 1 - \cos(20x)dx = x - \frac{\sin(20x)}{20}\Big|_0^{\frac{\pi}{20}}$

$= \frac{\pi}{20} - 0 = \frac{\pi}{20}$

a) $\frac{3}{10}\pi$

b) $\frac{1}{10}\pi$

c) $\frac{1}{5}\pi$

d) $\frac{1}{20}\pi$

e) $\frac{2}{15}\pi$

Q12. Recall: $\sin^2x + \cos^2x = 1 \Rightarrow \sin^2x = 1 - \cos^2x$

$\int(\cos(11x))^4(\sin(11x))^2(\sin(11x))dx$

$= \int(\cos(11x))^4(1 - \cos^2(11x))(\sin(11x))dx$

Question 12

You did not answer the question.

$\Rightarrow$ let $u = \cos(11x)$, $du = -11\sin(11x)dx$

Calculate the given integral:

$$\int(\cos(11x))^4(\sin(11x))^3\,dx$$

$= \int u^4(1-u^2)\cdot\left(\frac{du}{-11}\right)$

a) $\frac{1}{55}(\sin(11x))^5 + \frac{1}{77}(\sin(11x))^7 + C$

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

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

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

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

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

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

Question 13

You did not answer the question.

Calculate the given integral:

$$\int 2\csc^2(5x)\,dx$$

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

b) $-2\cot(5x) + C$

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

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

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

Q13, Recall

$$\boxed{\frac{d}{dx}(\cot(ax)) = -a\csc^2(ax).}$$

$$\Rightarrow \int \csc^2(ax)\,dx = -\frac{1}{a}\cot(ax) + C.$$

$$2\int \csc^2(5x)\,dx$$

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

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

Question 14

You did not answer the question.

Calculate the given integral:

$$\int 2\tan^3(4x)\,dx$$

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

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

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) $\tan^2(4x) + 2\ln|\cos(4x)| + C$

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

$\Rightarrow \tan^2 x = \sec^2 x - 1$

$$2\int \tan(4x)\cdot\tan^2(4x)\,dx$$

$$= 2\int \tan(4x)\,[\sec^2 4x - 1]\,dx$$

$$= 2\int (\tan(4x)\sec^2(4x) - \tan(4x))\,dx$$

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

$$\parallel$$

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

Question 15

You did not answer the question.

Calculate the given integral:

$$\int 5\sin(8x)\cos(9x)\,dx$$

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

b) $-\frac{5}{2}\cos(8x) + \frac{5}{2}\cos(x) + C$

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

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

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

Q15.

Recall: $\sin x\cos y = \frac{1}{2}\sin(x+y) + \frac{1}{2}\sin(x-y)$

$$5\int \sin(8x)\cos(9x)\,dx$$

$$= 5\int\left(\frac{1}{2}\sin(8x+9x) + \frac{1}{2}\sin(8x-9x)\right)dx$$

$$= \frac{5}{2}\int[\sin(17x) + \sin(-x)]\,dx$$

$\sin(-x) = -\sin(x)$

$$= \frac{5}{2}\int[\sin(17x) - \sin(x)]\,dx$$

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

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

Question 16

You did not answer the question.

Calculate the given integral:

$$\int 4(\tan(11x))^2(\sec(11x))^2\,dx$$

a) $\frac{4}{3}(\tan(11x))^3 + C$

Q16,

Let $u = \tan(11x)$, $du = 11\sec^2(11x)\,dx$

$$\Rightarrow \frac{du}{11} = \sec^2(11x)\,dx$$

$$4\int(\tan(11x))^2(\sec(11x))^2\,dx$$

$$= 4\int u^2\cdot\frac{du}{11} = \frac{4}{11}\int u^2\,du$$

$$= \frac{4}{11}\cdot\frac{u^3}{3} + C$$

$$= \frac{4}{33}(\tan(11x))^3 + C$$

b) $\frac{4}{33}(\tan(11x))^3 + C$

c) $\frac{4}{33}(\tan(11x))^3(\sec(11x))^2 + C$

d) $\frac{4}{33}(\sec(11x))^3 + C$

e) $\frac{4}{3}(\sec(11x))^4 + C$

Question 17

You did not answer the question.

Calculate the given integral:

$$\int (\tan(2x))^4\,dx$$

Q17.

$$\int (\tan(2x))^2(\tan(2x))^2\,dx \qquad \tan^2 x = \sec^2 x - 1$$

$$= \int (\tan(2x))^2(\sec^2(2x) - 1)\,dx$$

$$= \int (\tan(2x))^2\cdot(\sec(2x))^2 - (\tan(2x))^2\,dx$$

$$= \int (\tan(2x))^2(\sec(2x))^2 - (\sec^2(2x) - 1)\,dx$$

$$= \int (\tan(2x))^2(\sec(2x))^2 - \sec^2(2x) + 1\,dx$$

$$= \frac{1}{2}\frac{(\tan(2x))^3}{3} - \frac{1}{2}\tan(2x) + x + C$$

a) $\frac{1}{6}(\tan(2x))^5 + \frac{1}{2}\tan(2x) + \frac{1}{2}x + C$

b) $\frac{1}{6}(\tan(2x))^3 - \frac{1}{2}\tan(2x) + x + C$

c) $\frac{1}{6}\tan(2x)^4 + \frac{1}{2}\tan(2x) + x + C$

d) $\frac{1}{6}(\tan(2x))^5 - \frac{1}{2}(\tan(2x))^2 + \frac{1}{2}x + C$

e) $\frac{1}{6}(\tan(2x))^3 - \frac{1}{2}\tan(2x) + \frac{1}{2}x + C$

Question 18

You did not answer the question.

Calculate the given integral:

$$\int \sin(8x)\sin(2x)\,dx$$

Q18. Recall (see Q11).

$$\int \sin(8x)\sin(2x)\,dx$$

$$= \int\left[\frac{1}{2}\cos(8x-2x) - \frac{1}{2}\cos(8x+2x)\right]dx$$

$$= \frac{1}{2}\int[\cos(6x) - \cos(10x)]\,dx$$

$$= \frac{1}{2}\left[\frac{\sin(6x)}{6} - \frac{\sin(10x)}{10}\right] + C$$

$$= \frac{1}{12}\sin(6x) - \frac{1}{20}\sin(10x) + C$$

a) $\frac{1}{12}\sin(6x) - \frac{1}{20}\sin(10x) + C$

b) $\frac{1}{12}\cos(8x) - \frac{1}{20}\cos(10x) + C$

c) $\frac{1}{12}\sin(6x) + \frac{1}{20}\sin(10x) + C$

d) $\frac{1}{16}\sin(6x) - \frac{1}{20}\sin(8x) + C$

e) $\frac{1}{16}\cos(8x) + \frac{1}{12}\sin(6x) + C$

Question 19

You did not answer the question.

Calculate the given integral:

$$\int 4\sec^4(6x)\,dx$$

Q19.

$$4\int (\sec(6x))^2(\sec(6x))^2\,dx \qquad \sec^2 x = \tan^2 x + 1$$

$$= 4\int (\sec(6x))^2(\tan^2(6x) + 1)\,dx$$

$$= 4\int [\tan^2(6x)\sec^2(6x) + \sec^2(6x)]\,dx$$

let $u = \tan(6x)$.

$du = 6\sec^2(6x)\,dx$

$\Rightarrow \frac{du}{6} = \sec^2(6x)\,dx$

$$= 4\int [u^2 + 1]\frac{du}{6}$$

$$= \frac{4}{6}\cdot\left(\frac{u^3}{3} + u\right) + C$$

$$= \frac{2}{9}\cdot(\tan(6x))^3 + \frac{2}{3}(\tan(6x)) + C.$$

a) $\frac{2}{9}\sec^5(6x) + C$

b) $\frac{4}{3}\tan^3(6x) + 4\tan(6x) + C$

c) $\frac{2}{9}\sec^5(6x)\tan(6x) + C$

d) $-\frac{2}{9}\tan^3(6x) - \frac{2}{3}\tan(6x) + C$

e) $\frac{2}{9}\tan^3(6x) + \frac{2}{3}\tan(6x) + C$

Question 20

You did not answer the question.

Calculate the given integral:

$$\int 4\tan^5(3x)\,dx$$

Q20.

$$4\int \tan^3(3x)\tan^2(3x)\,dx$$

$$= 4\int \tan^3(3x)(\sec^2(3x) - 1)\,dx$$

$$= 4\int \tan^3(3x)\sec^2(3x) - \tan^3(3x)\,dx$$

$(\tan(3x)\cdot\tan^2(3x))$

$$= 4\int \tan^3(3x)\sec^2(3x) - \tan(3x)(\sec^2(3x) - 1)\,dx$$

$$= 4\int [\tan^3(3x)\sec^2(3x) - \tan(3x)\sec^2(3x) + \tan(3x)]\,dx$$

$$= 4\left[\frac{1}{3}\cdot\frac{1}{4}[\tan(3x)]^4 - \frac{1}{3}\cdot\frac{1}{2}[\tan(3x)]^2 + \frac{\ln|\sec(3x)|}{3}\right] + C$$

a) $\frac{2}{9}\tan^6(3x) + \frac{4}{3}\ln|\sec(3x)| + C$

b) $\frac{1}{3}\tan^4(3x) + \frac{4}{3}\ln|\sec(3x)| + C$

c) $\boxed{\frac{1}{3}\tan^4(3x) - \frac{2}{3}\tan^2(3x) + \frac{4}{3}\ln|\sec(3x)| + C}$

d) $\frac{4}{15}\tan^5(3x) + \frac{4}{3}\ln|\sec(3x)| + C$

e) $\frac{2}{9}\tan^6(3x) - \frac{2}{3}\tan^2(3x) + \frac{4}{3}\ln|\sec(3x)| + C$

nverse Tri. Algebraic fn. Exponential

I. L. A. T. E.

Logarithmic fn. Tri. fn.

u $\longrightarrow$

$\longleftarrow$ dv.