May 092013 1st.gwb - 1/2 - Thu May 092013 08:14:59
(51) $\int_{0}^{10}\left(1-e^{-\frac{1}{4} t}\right) d t$

$$
\begin{aligned}
\left.\left(t+4 e^{-\frac{1}{4} t}\right)\right|_{0} ^{10} & =\left(10+4 e^{-\frac{10}{4}}\right)-\left(0+4 e^{8}\right) \\
& =6+4 e^{-\frac{5}{2}}
\end{aligned}
$$

(19) $\int \tan x d x=-\int-\frac{\sin x}{\cos x} d x$ $u=\cos x$
$d u=-\sin x d x$

$$
\begin{array}{r}
=-\int \frac{1}{\underbrace{\cos x}_{n}}(\underbrace{(-\sin x) d x}_{d x}=-\int \frac{1}{u} d x=-\ln |u|+c \\
=-\ln |\cos x|+c
\end{array}
$$

$$
\begin{aligned}
& (11) \\
& \int e^{x}\left(1-e^{-x}\right) d x=\int\left(e^{x}+e^{0}\right) d x \\
= & \int\left(e^{x}+1\right) d x=e^{x}+x+c
\end{aligned}
$$

$$
\begin{aligned}
57 \int_{0}^{1}\left(e^{x}-2\right)^{2} d x & =\int_{0}^{1}\left(e^{2 x}-2\right)\left(e^{x}-2\right) \\
=\left.\left(\frac{1}{2} e^{2 x}-4 e^{x}+4 x\right)\right|_{0} ^{1} & =\left(\frac{1}{2} e^{2}-4 e+4\right)-\left(\frac{1}{2} e^{6}-4 e^{x}+0\right) \\
& =\frac{1}{2} e^{2}-4 e+\frac{15}{2}
\end{aligned}
$$

(17) $\int \frac{e^{\frac{1}{x}}}{x^{2}} d x=-\int e^{\frac{n_{0}}{x}}(\underbrace{\left.-\frac{1}{x^{2}}\right) d x}_{d n}$

$$
=-\int e^{u} d u=-e^{u}+c
$$

$$
\begin{aligned}
u & =\frac{1}{x}=x^{-1} \\
d u & =-x^{-2} d x \\
d u & =-\frac{1}{x^{2}} d x
\end{aligned}
$$

$$
=-e^{\frac{1}{x}}+c
$$

