Calculus II Integrals of the form $\int e^{ax} dx$

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2019

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Find
$$\int e^{3x} dx$$
.

Find
$$\int e^{3x} dx$$
.
Let $u =$?

Find
$$\int e^{3x} dx$$
.
Let $u = 3x$.

Find
$$\int e^{3x} dx$$
.
Let $u = 3x$.
Then $du = ?$

Find
$$\int e^{3x} dx$$
.
Let $u = 3x$.
Then $du = 3dx$

Find
$$\int e^{3x} dx$$
.
Let $u = 3x$.
Then $du = 3dx$
 $dx =$?

Find
$$\int e^{3x} dx$$
.
Let $u = 3x$.
Then $du = 3dx$
 $dx = \frac{1}{3}du$.

Find
$$\int e^{3x} dx$$
.
Let $u=3x$.
Then $du=3dx$
 $dx=\frac{1}{3}du$.
Substitute: $\int e^{3x} dx = \int e^{u}$?

Find
$$\int e^{3x} dx$$
.
Let $u=3x$.
Then $du=3dx$
 $dx=\frac{1}{3}du$.
Substitute: $\int e^{3x} dx = \int e^{u}$?

Find
$$\int e^{3x} dx$$
.
Let $u = 3x$.
Then $du = 3dx$
 $dx = \frac{1}{3}du$.
Substitute: $\int e^{3x} dx = \int \frac{1}{3}e^{u} du$

Find
$$\int e^{3x} dx$$
.
Let $u = 3x$.
Then $du = 3dx$
 $dx = \frac{1}{3}du$.
Substitute: $\int e^{3x} dx = \int \frac{1}{3} e^{u} du$
 $=$?

Find
$$\int e^{3x} dx$$
.
Let $u=3x$.
Then $du=3dx$
 $dx=\frac{1}{3}du$.
Substitute: $\int e^{3x} dx = \int \frac{1}{3} e^{u} du$
 $=\frac{1}{3} e^{u}$

Find
$$\int e^{3x} dx$$
.
Let $u=3x$.
Then $du=3dx$
 $dx=\frac{1}{3}du$.
Substitute: $\int e^{3x} dx = \int \frac{1}{3}e^{u} du$
 $=\frac{1}{3}e^{u}+C$

Find
$$\int e^{3x} dx$$
.
Let $u = 3x$.
Then $du = 3dx$
 $dx = \frac{1}{3}du$.
Substitute: $\int e^{3x} dx = \int \frac{1}{3}e^{u} du$
 $= \frac{1}{3}e^{u} + C$
 $= \frac{1}{3}e^{3x} + C$.