

Calculus Practice: Techniques for Finding Antiderivatives 6b**Evaluate each indefinite integral. Use the provided substitution.**

1) $\int \frac{5}{x(-3 + \ln -3x)} dx; u = -3 + \ln -3x$

2) $\int -\frac{4e^{1 + \ln 5x}}{x} dx; u = 1 + \ln 5x$

3) $\int -\frac{4}{x(-1 + \ln 4x)} dx; u = -1 + \ln 4x$

4) $\int -\frac{5e^{-3 + \ln 4x}}{x} dx; u = -3 + \ln 4x$

5) $\int -\frac{1}{x(5 + \ln -x)} dx; u = 5 + \ln -x$

6) $\int \frac{1}{x(-1 + \ln x)} dx; u = -1 + \ln x$

7) $\int -\frac{2}{x(-4 + \ln 3x)} dx; u = -4 + \ln 3x$

8) $\int \frac{5^{4 + \ln 5x}}{x} dx; u = 4 + \ln 5x$

9) $\int \frac{4}{x(-5 + \ln -5x)} dx; u = -5 + \ln -5x$

10) $\int -\frac{1}{x(-5 + \ln -2x)} dx; u = -5 + \ln -2x$

$$11) \int -\frac{4e^{4+\ln x}}{x} dx; u = 4 + \ln x$$

$$12) \int -\frac{5}{x(-5 + \ln -5x)} dx; u = -5 + \ln -5x$$

$$13) \int -\frac{3}{x(3 + \ln -5x)} dx; u = 3 + \ln -5x$$

$$14) \int -\frac{4e^{-4+\ln -2x}}{x} dx; u = -4 + \ln -2x$$

$$15) \int \frac{3 \cdot 2^{-5+\ln 5x}}{x} dx; u = -5 + \ln 5x$$

$$16) \int \frac{2 \cdot 3^{2+\ln -x}}{x} dx; u = 2 + \ln -x$$

$$17) \int -\frac{e^{2+\ln x}}{x} dx; u = 2 + \ln x$$

$$18) \int \frac{3^{-5+\ln 5x}}{x} dx; u = -5 + \ln 5x$$

$$19) \int -\frac{4e^{4+\ln -3x}}{x} dx; u = 4 + \ln -3x$$

$$20) \int \frac{5}{x(4 + \ln -2x)} dx; u = 4 + \ln -2x$$

Calculus Practice: Techniques for Finding Antiderivatives 6b

Evaluate each indefinite integral. Use the provided substitution.

1) $\int \frac{5}{x(-3 + \ln -3x)} dx; u = -3 + \ln -3x$

$$5 \ln |-3 + \ln -3x| + C$$

2) $\int -\frac{4e^{1 + \ln 5x}}{x} dx; u = 1 + \ln 5x$

$$-4e^{1 + \ln 5x} + C$$

3) $\int -\frac{4}{x(-1 + \ln 4x)} dx; u = -1 + \ln 4x$

$$-4 \ln |-1 + \ln 4x| + C$$

4) $\int -\frac{5e^{-3 + \ln 4x}}{x} dx; u = -3 + \ln 4x$

$$-5e^{-3 + \ln 4x} + C$$

5) $\int -\frac{1}{x(5 + \ln -x)} dx; u = 5 + \ln -x$

$$-\ln |5 + \ln -x| + C$$

6) $\int \frac{1}{x(-1 + \ln x)} dx; u = -1 + \ln x$

$$\ln |-1 + \ln x| + C$$

7) $\int -\frac{2}{x(-4 + \ln 3x)} dx; u = -4 + \ln 3x$

$$-2 \ln |-4 + \ln 3x| + C$$

8) $\int \frac{5^{4 + \ln 5x}}{x} dx; u = 4 + \ln 5x$

$$\frac{5^{4 + \ln 5x}}{\ln 5} + C$$

9) $\int \frac{4}{x(-5 + \ln -5x)} dx; u = -5 + \ln -5x$

$$4 \ln |-5 + \ln -5x| + C$$

10) $\int -\frac{1}{x(-5 + \ln -2x)} dx; u = -5 + \ln -2x$

$$-\ln |-5 + \ln -2x| + C$$

$$11) \int -\frac{4e^{4+\ln x}}{x} dx; u = 4 + \ln x$$

$$-4e^{4+\ln x} + C$$

$$12) \int -\frac{5}{x(-5 + \ln -5x)} dx; u = -5 + \ln -5x$$

$$-5 \ln |-5 + \ln -5x| + C$$

$$13) \int -\frac{3}{x(3 + \ln -5x)} dx; u = 3 + \ln -5x$$

$$-3 \ln |3 + \ln -5x| + C$$

$$14) \int -\frac{4e^{-4+\ln -2x}}{x} dx; u = -4 + \ln -2x$$

$$-4e^{-4+\ln -2x} + C$$

$$15) \int \frac{3 \cdot 2^{-5+\ln 5x}}{x} dx; u = -5 + \ln 5x$$

$$\frac{3 \cdot 2^{-5+\ln 5x}}{\ln 2} + C$$

$$16) \int \frac{2 \cdot 3^{2+\ln -x}}{x} dx; u = 2 + \ln -x$$

$$\frac{2 \cdot 3^{2+\ln -x}}{\ln 3} + C$$

$$17) \int -\frac{e^{2+\ln x}}{x} dx; u = 2 + \ln x$$

$$-e^{2+\ln x} + C$$

$$18) \int \frac{3^{-5+\ln 5x}}{x} dx; u = -5 + \ln 5x$$

$$\frac{3^{-5+\ln 5x}}{\ln 3} + C$$

$$19) \int -\frac{4e^{4+\ln -3x}}{x} dx; u = 4 + \ln -3x$$

$$-4e^{4+\ln -3x} + C$$

$$20) \int \frac{5}{x(4 + \ln -2x)} dx; u = 4 + \ln -2x$$

$$5 \ln |4 + \ln -2x| + C$$