

Quick Hit 5.2 (1)

1. Compute the following

$$(a) \int e^x dx = e^x + C$$

$$(b) \int x^e dx = \frac{x^{e+1}}{e+1} + C$$

$$(c) \int (6x^2 + 1)e^{2x^3+x} dx = \int e^u du = e^u + C$$
$$u = 2x^3 + x$$
$$du = 6x^2 + 1 dx$$
$$= e^{2x^3+x} + C$$

$$(d) \int \frac{-4x+3}{-2x^2+3x+1} dx = \int \frac{1}{u} du = \ln(|u|) + C$$
$$u = -2x^2 + 3x + 1$$
$$du = -4x + 3 dx$$
$$= \ln(|-2x^2 + 3x + 1|) + C$$

