

Calculus Assignment # 1

Evaluate each of the following integrals please

$$(1) \int (7x^3 + 5x^2 - 3x + 1) dx$$

$$(9) \int (5r \sqrt{2 - r^2}) dr$$

$$(2) \int (5x - 4)^{12} dx$$

$$(10) \int \left(\frac{1}{(3x - 2)^2} \right) dx$$

$$(3) \int \left(\frac{1}{\sqrt{1 - x}} \right) dx$$

$$(11) \int \left(\frac{7t}{(t^2 + 1)^3} \right) dt$$

$$(4) \int (2 - t)^{\frac{3}{2}} dt$$

$$(12) \int \left(\frac{x + 1}{2\sqrt{x + 1}} \right) dx$$

$$(5) \int x^2 (2 + x^3)^2 dx$$

$$(13) \int \left(\frac{(3 + \sqrt[3]{x})^4}{\sqrt[3]{x^2}} \right) dx$$

$$(6) \int (2 + x^3)^2 dx$$

$$(14) \int \left(\frac{z + 1}{\sqrt[3]{z^2 + 2z + 2}} \right) dz$$

$$(7) \int \left(\frac{x^2}{\sqrt{1 + x^3}} \right) dx$$

$$(15) \int \left(\frac{5}{x^2 + 4x + 4} \right) dx$$

$$(8) \int x^4 (7 - x^5)^3 dx$$

$$(16) \int \left(\frac{1}{\sqrt{x} \sqrt{1 + \sqrt{x}}} \right) dx$$

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Answers

$$(1) \frac{7}{4}x^4 + \frac{5}{3}x^3 - \frac{3}{2}x^2 + x + C$$

$$(9) -\frac{5}{3}(2 - r^2)^{\frac{3}{2}} + C$$

$$(2) \frac{1}{65}(5x - 4)^{13} + C$$

$$(10) -\frac{1}{3(3x - 2)} + C$$

$$(3) -2\sqrt{1 - x} + C$$

$$(11) -\frac{7}{4}(t^2 + 1)^{-2} + C$$

$$(4) -\frac{2}{5}(2 - t)^{\frac{5}{2}} + C$$

$$(12) \frac{1}{3}(x + 1)^{\frac{3}{2}} + C$$

$$(5) \frac{1}{9}(2 + x^3)^3 + C$$

$$(13) \frac{3}{5}(3 + \sqrt[3]{x})^5 + C$$

$$(6) 4x + x^4 + \frac{1}{7}x^7 + C$$

$$(14) \frac{3}{4}(z^2 + 2z + 2)^{\frac{2}{3}} + C$$

$$(7) \frac{2}{3}\sqrt{1 + x^3} + C$$

$$(15) -\frac{5}{x + 2} + C$$

$$(8) -\frac{1}{20}(7 - x^5)^4 + C$$

$$(16) 4\sqrt{1 + \sqrt{x}} + C$$