

LESSON (57) - HW:

Quest ①: Find the primitive functions, $F(x)$, of the following: -

(1) x^3 (2) x^8 (3) 5 (4) $2x$

(5) $12x^2$ (6) $5x^9$ (7) $\frac{x^4}{2}$ (8) $x^{3/2}$

(9) \sqrt{x} (10) x^{-3} (11) $\frac{1}{x^2}$ (12) $\frac{6}{x^4}$

Quest ②: Find the primitive functions, $F(x)$, of the following.

(1) $x^2 + 6$ (2) $x^3 + 6x$ (3) $4x^2 - 2x + 5$

(4) $3x^5 - 6x^2 + 1$ (5) $x^2 - 6x^3$ (6) $2 - 6x - 6x^5$

* (7) $5\sqrt{x} - \frac{1}{3x^2}$ *(8) $(x+3)^6$ ** (9) $\frac{1}{(4x-1)^3}$

Answers: (all with "+c")

① (1) $\frac{x^4}{4}$ (2) $\frac{x^9}{9}$ (3) $5x$ (4) x^2 (5) $4x^3$ (6) $\frac{x^{10}}{2}$ (7) $\frac{x^5}{10}$ (8) $\frac{2x^{5/2}}{5}$ (9) $\frac{2x^{3/2}}{3}$
(10) $-\frac{1}{2}x^{-2} = -\frac{1}{2x^2}$ (11) $-\frac{1}{x}$ (12) $-\frac{2}{x^3}$ ② (1) $\frac{x^3}{3} + 6x$ (2) $\frac{x^4}{4} + 3x^2$ (3) $\frac{4}{3}x^3 - x^2 + 5x$
(4) $\frac{1}{2}x^6 - 2x^3 + x$ (5) $\frac{1}{3}x^3 - \frac{3}{2}x^4$ (6) $2x - 3x^2 - x^6$ (7) $\frac{10}{3}x^{3/2} + \frac{1}{3}x$ (8) $\frac{(x+3)^7}{7}$ (9) $-\frac{1}{8(4x-1)^2}$

