

2013年第1問



1 $x^6 + 2x^5 + 4x^4 + ax^3 + bx^2 + 8x + 6$ が $x^3 + 2$ で割り切れるとき、 $a + b$ の値を求めよ。

$$\begin{array}{r}
 x^3 + 2x^2 + 4x + (a-2) \\
 x^3 + 2 \quad \Big) \quad x^6 + 2x^5 + 4x^4 + ax^3 + bx^2 + 8x + 6 \\
 \underline{x^6 + 2x^3} \\
 2x^5 + 4x^4 + (a-2)x^3 \\
 \underline{2x^5 + 4x^2} \\
 4x^4 + (a-2)x^3 + (b-4)x^2 \\
 \underline{4x^4 + 8x} \\
 (a-2)x^3 + (b-4)x^2 + 6 \\
 \underline{(a-2)x^3 + (2a-4)} \\
 (b-4)x^2 - 2a + 10
 \end{array}$$

$$\therefore b = 4, \quad -2a + 10 = 0 \qquad \therefore a + b = 5 + 4 = \underline{\underline{9}} //$$