

因数分解 (たすき掛け)

組 番 氏名 _____

【例題】 $3x^2 + 7x + 2$ の因数分解

因数分解の公式

$$acx^2 + (ad + bc)x + bd = (ax + b)(cx + d)$$

において, $ac = 3, bd = 2$

を満たす a, b, c, d のうち

$$ad + bc = 7$$

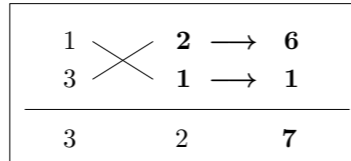
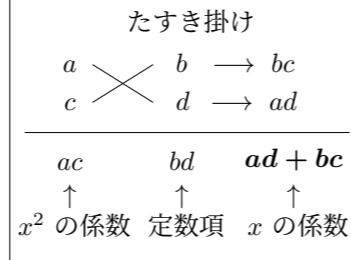
となるものを見つければよい。

$a = 1, c = 3$ として, 次の各場合を考える。

$$\begin{cases} b = 1 \\ d = 2 \end{cases}, \begin{cases} b = 2 \\ d = 1 \end{cases}, \begin{cases} b = -1 \\ d = -2 \end{cases}, \begin{cases} b = -2 \\ d = -1 \end{cases}$$

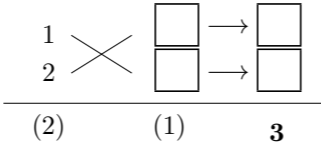
この中で, $ad + bc = 7$ となるのは, $b = 2, d = 1$ のときだけである。

よって $3x^2 + 7x + 2 = (x + 2)(3x + 1)$ 答

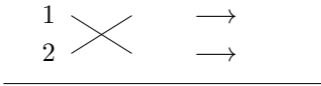


【練習問題】 次の式を因数分解せよ。

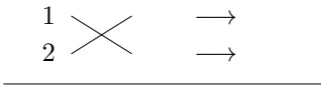
(1) $2x^2 + 3x + 1$
 $= (x + \square)(2x + \square)$



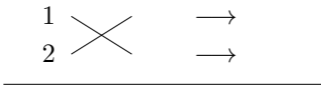
(2) $2x^2 + 5x + 2$
 $= (x + \square)(2x + \square)$



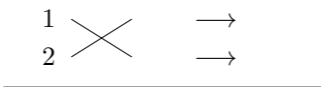
(3) $2x^2 - 7x + 3$
 $= (x - \square)(2x - \square)$



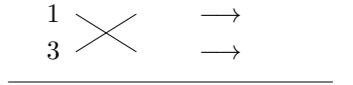
(4) $2x^2 - 9x + 4$
 $= (x - \square)(2x - \square)$



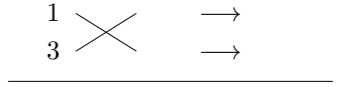
(5) $2x^2 - 5x - 3$
 $= (x \quad \quad)(2x \quad \quad)$



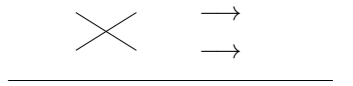
(6) $3x^2 + x - 2$
 $= (x \quad \quad)(3x \quad \quad)$



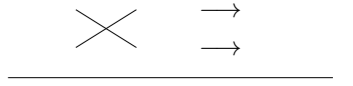
(7) $3x^2 - 8x - 3$
 $= (x \quad \quad)(3x \quad \quad)$



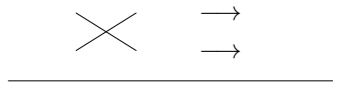
(8) $6x^2 + x - 2$



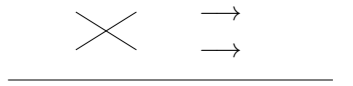
(9) $6x^2 + 7x - 5$



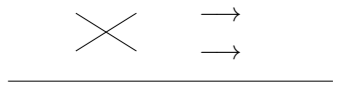
(10) $6x^2 - x - 12$



(11) $6x^2 - 13x + 6$



(12) $4x^2 + 8x - 21$



(1) $2x^2 + 3x + 1 = (x + 1)(2x + 1)$ (1)
 (2) $2x^2 + 5x + 2 = (x + 2)(2x + 1)$ (2)
 (3) $2x^2 - 7x + 3 = (x - 1)(2x - 3)$ (3)
 (4) $2x^2 - 9x + 4 = (x - 4)(2x - 1)$ (4)
 (5) $2x^2 - 5x - 3 = (x - 3)(2x + 1)$ (5)
 (6) $3x^2 + x - 2 = (x - 1)(3x + 2)$ (6)
 (7) $3x^2 - 8x - 3 = (x + 1)(3x - 9)$ (7)
 (8) $6x^2 + x - 2 = (x - 1)(6x + 2)$ (8)
 (9) $6x^2 + 7x - 5 = (x - 1)(6x + 12)$ (9)
 (10) $6x^2 - x - 12 = (x - 3)(6x + 4)$ (10)
 (11) $6x^2 - 13x + 6 = (x - 2)(6x - 3)$ (11)
 (12) $4x^2 + 8x - 21 = (x - 3)(4x + 7)$ (12)

(1) $2x^2 + 3x + 1 = (x + 1)(2x + 1)$ (1)
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 (12) $4x^2 + 8x - 21 = (x - 3)(4x + 7)$ (12) 【易解】