

因数分解パズル

問. 次の \square に適当な自然数を入れて、縦にも横にも因数分解できるようにせよ。

(1)

$$\begin{array}{c} x^2 + \square x - \square \\ + \quad + \\ x^2 + 6x - 7 \\ = (x - \square)(x + \square) \\ + \quad + \\ x^2 + \square x + 6 \\ = (x + \square)(x + \square) \\ = (x + \square)(x + \square) \\ \square \quad \square \\ = (x + \square)(x + \square) \\ \square \quad \square \end{array}$$

(2)

$$\begin{array}{c} x^2 + \square x - \square \\ + \quad - \\ x^2 + 5x - 6 \\ = (x - \square)(x + \square) \\ - \quad + \\ x^2 + \square x + \square \\ = (x + \square)(x + \square) \\ = (x - \square)(x - \square) \\ \square \quad \square \\ = (x - \square)(x - \square) \\ \square \quad \square \end{array}$$

(3)

$$\begin{array}{c} x^2 + \square x + 15 \\ + \quad - \\ x^2 - 8x + 15 \\ = (x - \square)(x - \square) \\ - \quad + \\ x^2 - \square x + 14 \\ = (x - \square)(x - \square) \\ = (x - \square)(x - \square) \\ \square \quad \square \\ = (x - \square)(x - \square) \\ \square \quad \square \end{array}$$

(4)

$$\begin{array}{c} x^2 + \square x + 9 \\ + \quad + \\ x^2 + 10x + 9 \\ = (x + \square)(x + \square) \\ - \quad + \\ x^2 - \square x + \square \\ = (x - \square)(x - \square) \\ = (x - \square)(x - \square) \\ \square \quad \square \\ = (x - \square)(x - \square) \\ \square \quad \square \end{array}$$

(5)

$$\begin{array}{c} x^2 + \square x - \square \\ + \quad + \\ x^2 + 3x - 10 \\ = (x - \square)(x + \square) \\ + \quad + \\ x^2 + \square x - 24 \\ = (x - \square)(x + \square) \\ = (x + \square)(x + \square) \\ \square \quad \square \\ = (x + \square)(x + \square) \\ \square \quad \square \end{array}$$

(6)

$$\begin{array}{c} x^2 + \square x - 18 \\ + \quad - \\ x^2 - 7x - 18 \\ = (x + \square)(x - \square) \\ + \quad + \\ x^2 + \square x + \square \\ = (x + \square)(x + \square) \\ = (x + \square)(x + \square) \\ \square \quad \square \\ = (x + \square)(x + \square) \\ \square \quad \square \end{array}$$