

因数分解（因数分解まとめ）

組 番 名前

1 次の式を因数分解しなさい。

$$\begin{aligned} \textcircled{1} \quad x^2 - 4x - 21 \\ = (x-7)(x+3) \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad x^2 - 4 \\ = (x+2)(x-2) \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad x^2 + 20x + 36 \\ = (x+2)(x+18) \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad 2ax - 6bx + 4cx \\ = 2x(a-3b+2c) \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad 9a^2 - 25b^2 \\ = (3a+5b)(3a-5b) \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad 16x^2 - 8x + 1 \\ = (4x-1)^2 \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad -2x^2 - 8x + 24 \\ = -2(x^2 + 4x - 12) \\ = -2(x+6)(x-2) \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad 18xy^2 - 2x \\ = 2x(9y^2 - 1) \\ = 2x(3y+1)(3y-1) \end{aligned}$$

2 次の式を工夫して計算しなさい。

$$\begin{aligned} \textcircled{1} \quad 48^2 - 38^2 \\ = (48+38)(48-38) \\ = 86 \times 10 \\ = 860 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad 4^2 \times 26 + 4^2 \times 74 \\ = 4^2(26+74) \\ = 16 \times 100 \\ = 1600 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad 118^2 - 118 \times 18 \\ = 118(118-18) \\ = 118 \times 100 \\ = 11800 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad 41 \times 69 + 41 \times 38 - 7 \times 41 \\ = 41(69+38-7) \\ = 41 \times 100 \\ = 4100 \end{aligned}$$

3 因数分解を利用して、次の計算をしなさい。

$$\begin{aligned} \textcircled{1} \quad a=32, b=3 \text{ のとき、} (a+2b)^2 - a(a+2b) \text{ の値} \\ (a+2b)\{(a+2b)-a\} \\ = 2b(a+2b) \end{aligned}$$

$$\begin{aligned} &= 6(32+6) \\ &= 6 \times 38 \\ &= \underline{228} \end{aligned}$$

② $a=75.5, b=25.5$ のとき、 $a^2 - b^2$ の値

$$\begin{aligned} (a+b)(a-b) \\ (75.5+25.5)(75.5-25.5) \end{aligned}$$

$$\begin{aligned} &\nearrow 101 \times 50 \\ &= 5050 \\ &= \underline{5050} \end{aligned}$$

③ $a=24$ のとき、 $a^2 - 8a + 16$ の値を求めなさい。

$$\begin{aligned} (a-4)^2 \\ (24-4)^2 = 20^2 \\ = \underline{400} \end{aligned}$$