

因数分解 計算のまとめ発展2

学習日 月 日

/ 点

■ 次の式を因数分解しなさい。

$$(1) \quad 5x^2 - 20$$

$$(2) \quad 3x^2 - 18x + 27$$

$$(3) \quad 2ax^2 + 8ax - 10a$$

$$(4) \quad \frac{1}{9}x^2 - \frac{1}{4}$$

$$(5) \quad \frac{1}{3}x^2 + \frac{4}{3}x - \frac{5}{3}$$

$$(6) \quad (x - 3)^2 - 16$$

$$(7) \quad x^2 - y^2 + 2y - 1$$

解答

$$\begin{aligned}(1) \quad & 5 (x^2 - 4) \\ & = 5 (x + 2) (x - 2)\end{aligned}$$

$$\begin{aligned}(2) \quad & 3 (x^2 - 6x + 9) \\ & = 3 (x - 3)^2\end{aligned}$$

$$\begin{aligned}(3) \quad & 2a (x^2 + 4x - 5) \\ & = 2a (x + 5) (x - 1)\end{aligned}$$

$$(4) \quad \left(\frac{1}{3}x + \frac{1}{2} \right) \left(\frac{1}{3}x - \frac{1}{2} \right)$$

$$\begin{aligned}(5) \quad & \frac{1}{3} (x^2 + 4x - 5) \\ & = \frac{1}{3} (x + 5) (x - 1)\end{aligned}$$

$$(6) \quad x - 3 = M \quad \text{とおく}$$

$$\begin{aligned}M^2 - 16 &= (M + 4) (M - 4) \\ &= (x - 3 + 4) (x - 3 - 4) \\ &= (x + 1) (x - 7)\end{aligned}$$

$$\begin{aligned}(7) \quad & x^2 - (y^2 - 2y + 1) \\ & = x^2 - (y - 1)^2 \\ & = (x + y - 1) (x - y + 1)\end{aligned}$$