

平方完成：ステップ5【係数が分数、軸も分数】

例題 次の計算をせよ。

(1)  $y = \frac{1}{2}x^2 + 2x - \frac{5}{2}$

答

(2)  $y = -\frac{5}{3}x^2 - 3x - 2$

答

練習 次の計算をせよ。

(1)  $y = \frac{1}{2}x^2 + \frac{1}{2}x$

答

(4)  $y = -\frac{1}{2}x^2 + \frac{4}{3}x - 1$

答

(2)  $y = \frac{1}{2}x^2 - \frac{5}{2}x - 1$

答

(5)  $y = -\frac{3}{2}x^2 - x - \frac{5}{3}$

答

(3)  $y = \frac{1}{3}x^2 - \frac{1}{3}x - 2$

答

(6)  $y = \frac{2}{3}x^2 - x + 1$

答

平方完成：ステップ5【係数が分数、軸も分数】

例題 次の計算をせよ。

(1)  $y = \frac{1}{2}x^2 + 2x - \frac{5}{2}$

$$\begin{aligned}
 y &= \frac{1}{2}x^2 + 2x - \frac{5}{2} \\
 &= \frac{1}{2}(x^2 + 4x) - \frac{5}{2} \\
 &= \frac{1}{2}(x^2 + 4x + 4) - \frac{5}{2} \\
 &= \frac{1}{2}(x+2)^2 - \frac{9}{2}
 \end{aligned}$$

答  $y = \frac{1}{2}(x+2)^2 - \frac{9}{2}$

(2)  $y = -\frac{5}{3}x^2 - 3x - 2$

$$\begin{aligned}
 y &= -\frac{5}{3}x^2 - 3x - 2 \\
 &= -\frac{5}{3}\left(x^2 + \frac{9}{5}x\right) - 2 \\
 &= -\frac{5}{3}\left(x^2 + \frac{9}{5}x + \frac{81}{25}\right) - 2 \\
 &= -\frac{5}{3}\left(x + \frac{9}{10}\right)^2 - \frac{49}{20}
 \end{aligned}$$

答  $y = -\frac{5}{3}\left(x + \frac{9}{10}\right)^2 - \frac{13}{20}$

練習 次の計算をせよ。

(1)  $y = \frac{1}{2}x^2 + \frac{1}{2}x$

答  $y = \frac{1}{2}\left(x + \frac{1}{2}\right)^2 - \frac{1}{8}$

(2)  $y = \frac{1}{2}x^2 - \frac{5}{2}x - 1$

答  $y = \frac{1}{2}\left(x - \frac{5}{2}\right)^2 - \frac{33}{8}$

(3)  $y = \frac{1}{3}x^2 - \frac{1}{3}x - 2$

答  $y = \frac{1}{3}\left(x - \frac{1}{2}\right)^2 - \frac{25}{12}$

(4)  $y = -\frac{1}{2}x^2 + \frac{4}{3}x - 1$

答  $y = -\frac{1}{2}\left(x - \frac{4}{3}\right)^2 - \frac{1}{9}$

(5)  $y = -\frac{3}{2}x^2 - x - \frac{5}{3}$

答  $y = -\frac{3}{2}\left(x + \frac{1}{3}\right)^2 - \frac{3}{2}$

(6)  $y = \frac{2}{3}x^2 - x + 1$

答  $y = \frac{2}{3}\left(x - \frac{3}{4}\right)^2 + \frac{5}{8}$