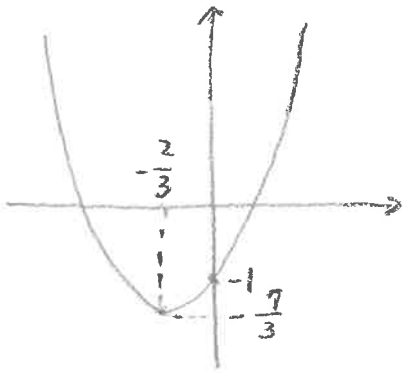
最大値・最小値

《レベル1》

(1) $y = 3x^2 + 4x - 1$

$= 3\left(x + \frac{2}{3}\right)^2 - \frac{7}{3}$

頂点 $\left(-\frac{2}{3}, -\frac{7}{3}\right)$

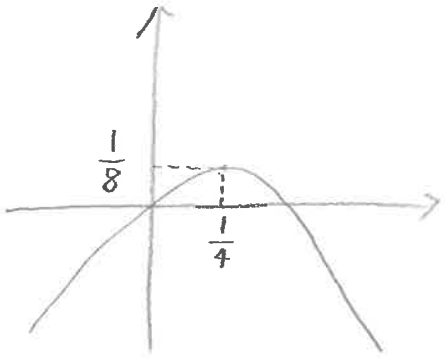


$\begin{cases} \text{Max} \quad \text{なし} \\ \text{Mini} \quad -\frac{7}{3} \quad \left(x = -\frac{2}{3} \text{のとき}\right) \end{cases}$

(2) $y = -2x^2 + x$

$= -2\left(x - \frac{1}{4}\right)^2 + \frac{1}{8}$

頂点 $\left(\frac{1}{4}, \frac{1}{8}\right)$



$\begin{cases} \text{Max} \quad \frac{1}{8} \quad \left(x = \frac{1}{4} \text{のとき}\right) \\ \text{Mini} \quad \text{なし} \end{cases}$

(3) $y = 2x^2 - 8x + 5 \quad (0 \leqq x \leqq 3)$

$= 2(x-2)^2 - 3$

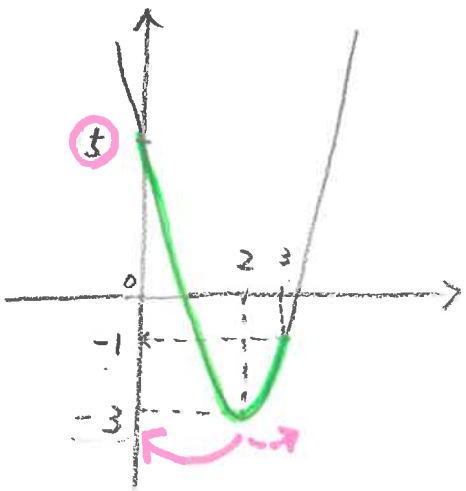
頂点 $(2, -3)$

$x = 3$ のとき

$y = 2 \cdot 3^2 - 8 \cdot 3 + 5$

$= 18 - 24 + 5$

$= -1$



$\begin{cases} \text{Max} \quad 5 \quad (x = 0 \text{のとき}) \\ \text{Mini} \quad -3 \quad (x = 2 \text{のとき}) \end{cases}$