

Key

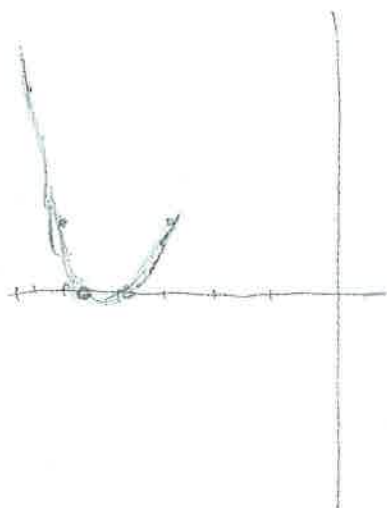
Math 4

1-3+1-4 Learn check

①
$$\begin{cases} x(t) = t - 5 \\ y(t) = t^2 - t \end{cases}$$

$-2 \leq t \leq 2$

t	x(t)	y(t)
-2	-7	6
-1	-6	2
0	-5	0
1	-4	0
2	-3	2



②
$$\begin{aligned} y &= (x+5)^2 - (x+5) \\ &= x^2 + 10x + 25 - x - 5 \\ &= x^2 + 9x + 20 \end{aligned}$$

③
$$\begin{aligned} e^{2x} - 2e^x - 35 &= 0 \\ (e^x - 7)(e^x + 5) &= 0 \\ e^x = 7 & \quad e^x = -5 \\ x = \ln 7 & \quad \text{No solution} \end{aligned}$$

④
$$\begin{aligned} (x-5)^2 + 6(x-5) + 2 &= 0 \\ [(x-5) + 2][(x-5) + 4] &= 0 \\ \left. \begin{aligned} x-5 &= -2 \\ x &= 3 \end{aligned} \right\} \left. \begin{aligned} x-5 &= -4 \\ x &= 1 \end{aligned} \right. \end{aligned}$$

⑤
$$\begin{aligned} x'' - 11x' + 24x &= 0 \\ x^3(x^2 - 11x' + 24) &= 0 \\ x^3(x^2 - 3)(x^2 - 8) &= 0 \\ x=0, x=\sqrt{3}, x=\sqrt{8} \end{aligned}$$