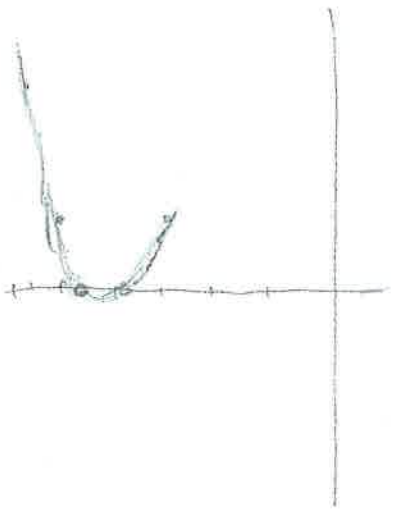
Key

Math 4

1-3+1-4 Learn Check

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

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



(2) $y = (x+5)^2 - (x+5)$

$= x^2 + 10x + 25 - x - 5$

$= x^2 + 9x + 20$

(3) $e^{2x} - 2e^x - 35 = 0$

$(e^x - 7)(e^x + 5) = 0$

$e^x = 7 \qquad e^x = -5$

$x = \ln 7 \qquad$ No solution

(4) $(x-5)^2 + 6(x-5) + 8 = 0$

$[(x-5)+2][(x-5)+4] = 0$

$x - 5 = -2 \qquad x - 5 = -4$

$x = 3 \qquad x = 1$

(5) $x^{11} - 11x^7 + 24x^3 = 0$

$x^3(x^8 - 11x^4 + 24) = 0$

$x^3(x^4 - 3)(x^4 - 8) = 0$

$x = 0, \quad x = \sqrt[4]{3}, \quad x = \sqrt[4]{8}$