

Converting between the Forms (2) Practice

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

x	-3
x^2	$-3x$
$2x$	-6

$y = x^2 - 3x + 2x - 6$

$y = (x-3)(x+2)$

② $y = 2x^2 - 4x - 16$ $\frac{4 \cdot -8}{4 \cdot 8} = -32$ $\frac{4 + -8}{4 \cdot 8} = -4$

$2x$	4
$2x^2$	$4x$
$-8x$	-16

$y = 2x^2 + 4x - 8x - 16$

$y = (2x+4)(x-4)$

③ $y = 9x^2 + 12x + 4$ $\frac{6 \cdot 6}{3 \cdot 2} = 36$ $\frac{6 + 6}{3 \cdot 2} = 12$

$3x$	2
$9x^2$	$6x$
$6x$	4

$y = 9x^2 + 6x + 6x + 4$

$y = (3x+2)(3x+2)$

④ $y = -6x^2 - x + 2$ $\frac{3 \cdot -4}{3 \cdot 4} = -12$ $\frac{3 + -4}{3 \cdot 4} = -1$

$3x$	$-2x$	1
$-6x^2$	$3x$	
$-4x$	2	

$y = -6x^2 + 3x - 4x + 2$

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

⑤ $y = x^2 + 4x - 32$ $\frac{8 \cdot -4}{2 \cdot 4} = -32$ $\frac{8 + -4}{2 \cdot 4} = 4$

x	8
x^2	$8x$
$-4x$	-32

$y = x^2 + 8x - 4x - 32$

$y = (x+8)(x-4)$

⑥ $y = 3x^2 - 3x - 90$ $\frac{-6 \cdot 5}{3 \cdot 5} = -30$ $\frac{-6 + 5}{3 \cdot 5} = -1$

x	-6
x^2	$-6x$
$5x$	-30

$y = 3(x^2 - x - 30)$

$y = 3(x^2 - 6x + 5x - 30)$

$y = 3(x-6)(x+5)$

⑦ $y = 3x^2 - 3x - 90$ $1 \cdot 270$ $2 \cdot 135$ $3 \cdot 90$ $5 \cdot 54$ $6 \cdot 45$ $9 \cdot 30$ $10 \cdot 27$ $15 \cdot 18$

$15 \cdot -18 = -270$

$15 + -18 = -3$

$3x$	15
$3x^2$	$15x$
$-18x$	-90

x	5
$3x^2$	$15x$
$-18x$	-90

$y = (3x+15)(x-6)$ $y = (x+5)(3x-18)$