Name: KEY

Factoring Practice

(1) $2x^2+6x+4$

$2(x^2+3x+2)$

	↓x	↓2
x →	x^2	2x
1 →	1x	2

$2x^2$

S	P	F
3x	$2x^2$	2, 1

$2(x+1)(x+2)$

(2) $3x^2-9x+6$

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

	↓x	↓2
x →	x^2	-2x
1 →	-1x	2

$2x^2$

S	P	F
-3x	$2x^2$	-2, -1

$3(x-1)(x-2)$

(3) $4x^2-24x+32$

$4(x^2-6x+8)$

	↓x	↓4
x →	x^2	-4x
2 →	-2x	8

$8x^2$

S	P	F
-6x	$8x^2$	-4, -2

$4(x-2)(x-4)$

(4) $5x^2-40x+75$

$5(x^2-8x+15)$

	↓x	↓5
x →	x^2	-5x
3 →	-3x	15

S	P	F
-8x	$15x^2$	-5, -3

$5(x-3)(x-5)$

(5) $7x^2+21x-70$

$7(x^2+3x-10)$

	↓x	↓5
x →	x^2	5x
2 →	-2x	-10

$-10x^2$

S	P	F
3x	$-10x^2$	5, -2

$7(x-2)(x+5)$

(6) $3x^2+12x+12$

$3(x^2+4x+4)$

	↓x	↓2
x →	x^2	2x
2 →	2x	4

$4x^2$

S	P	F
4x	$4x^2$	2x, 2x

$3(x+2)(x+2)$

(7) $10x^2 \neq 40$

Rewrite $10x^2 + 0x \neq 40$

$10(x^2 + 0x - 4)$

↓x	↓2
→ x: x^2	$2x$
→ 2: $-2x$	-4

$-4x^2$

S	P	F
$0x$	$-4x^2$	$2, -2$

$10(x-2)(x+2)$

(8) $5x^2 - 80 \quad x^2 + 0x - 80$

$5(x^2 + 0x - 16)$

↓x	↓4
→ x: x^2	$4x$
→ 4: $-4x$	16

S	P	F
0	$16x^2$	$4, -4$

$5(x+4)(x-4)$

(9) $3x^2 - 24x + 48$

$3(x^2 - 8x + 16)$

↓x	↓4
→ x: x^2	$-4x$
→ 4: $-4x$	16

$16x^2$

S	P	F
$-8x$	$16x^2$	$-4, -4$

$3(x-4)(x-4)$

(10) $-20 + x^2 - 1x$

Rewrite in standard form:

$x^2 - 1x - 20$

↓x	↓5
→ x: x^2	$-5x$
→ 4: $4x$	-20

S	P	F
$-1x$	$-20x^2$	$-5, 4$

$(x-5)(x+4)$

(11) $12x + 16 + 2x^2$

Rewrite: $2x^2 + 12x + 16$

$2(x^2 + 6x + 8)$

↓x	↓4
→ x: x^2	$4x$
→ 2: $2x$	8

S	P	F
$6x$	$8x^2$	$4, 2$

$2(x+2)(x+4)$

(12) $4x^2 + 8x + 4$

$4(x^2 + 2x + 1)$

↓x	↓1
→ x: x^2	$1x$
→ 1: $1x$	1

$1x^2$

S	P	F
$2x$	$1x^2$	$1, 1$

$4(x+1)(x+1)$