Name_____ICP factoring practice when A=1 11-30-15

Each of these is factorable Practice! Practice! Practice!

1	$x^2+21x+20$	$(x+1)(x+20)$	21	$x^2-16x+48$	$(x-12)(x-4)$
2	$x^2+21x+38$	$(x+19)(x+2)$	22	$x^2-6x-55$	$(x-11)(x+5)$
3	$x^2+21x+54$	$(x+3)(x+18)$	23	$x^2-11x+10$	$(x-1)(x-10)$
4	$x^2+21x+68$	$(x+17)(x+4)$	24	$x^2-11x+18$	$(x-9)(x-2)$
5	$x^2+21x+80$	$(x+16)(x+5)$	25	$x^2-5x-24$	$(x-8)(x+3)$
6	$x^2+14x-15$	$(x+15)(x-1)$	26	$x^2-3x-28$	$(x-7)(x+4)$
7	$x^2+16x+28$	$(x+2)(x+14)$	27	$x^2-11x+30$	$(x-5)(x-6)$
8	$x^2+10x-39$	$(x+13)(x-3)$	28	x^2-6x+5	$(x-1)(x-5)$
9	$x^2+8x-48$	$(x+12)(x-4)$	29	x^2-6x+8	$(x-2)(x-4)$
10	$x^2+16x+55$	$(x+11)(x+5)$	30	x^2-6x+9	$(x-3)(x-3)$
11	$x^2+9x-10$	$(x+10)(x-1)$	31	x^2+2x-8	$(x+4)(x-2)$
12	$x^2+7x-18$	$(x+9)(x-2)$	32	x^2+4x-5	$(x+5)(x-1)$
13	$x^2+11x+24$	$(x+3)(x+8)$	33	$x^2-19x-20$	$(x-20)(x+1)$
14	$x^2+11x+28$	$(x+4)(x+7)$	34	$x^2-16x+39$	$(x-3)(x-13)$
15	x^2+x-30	$(x+6)(x-5)$	35	$x^2-17x-38$	$(x-19)(x+2)$
16	x^2+4x-5	$(x+5)(x-1)$	36	$x^2-15x-54$	$(x-18)(x+3)$
17	x^2+2x-8	$(x+4)(x-2)$	37	$x^2-13x-68$	$(x-17)(x+4)$
18	x^2-9	$(x+3)(x-3)$	38	$x^2-11x-80$	$(x-16)(x+5)$
19	x^2+6x+8	$(x+2)(x+4)$	39	$x^2-16x+15$	$(x-1)(x-15)$
20	x^2+6x+5	$(x+1)(x+5)$	40	$x^2-12x-28$	$(x-14)(x+2)$

FOIL Practice

	Binomial factor 1	Binomial factor 2	Quadratic term	Linear term 1	Linear term 2	Constant	Simplified product
1	(2x+1)	(x+2)	$2x^2$	$+1x$	$+2x$	$+2$	$2x^2+3x+2$
2	(2x+1)	(3x+2)	$6x^2$	$+3x$	$+4x$	$+2$	$6x^2+7x+2$
3	(3x+1)	(3x+2)	$9x^2$	$+3x$	$+6x$	$+2$	$9x^2+9x+2$
4	(2x-1)	(2x+1)	$4x^2$	$-2x$	$+2x$	-1	$4x^2-1=4x^2-0x+1$
5	(2x+1)	(2x+1)	$4x^2$	$+2x$	$+2x$	$+1$	$4x^2+4x+1$
6	(2x-3)	(x+3)	$2x^2$	$-3x$	$+6x$	-9	$2x^2+3x-9$
7	(2x+4)	(x+4)	$2x^2$	$+4x$	$+8x$	$+16$	$2x^2+12x+16$
8	(2x-3)	(x-2)	$2x^2$	$-3x$	$-4x$	$+6$	$2x^2-7x+6$
9	(2x+1)	(x-5)	$2x^2$	$+1x$	$-10x$	-5	$2x^2-9x-5$
10	(6x-1)	(3x+2)	$18x^2$	$-3x$	$+12x$	-2	$18x^2+9x-2$
11	(8x+1)	(5x+2)	$40x^2$	$+5x$	$+16x$	$+2$	$40x^2+21x+2$
12	(6x-1)	(5x+2)	$30x^2$	$-5x$	$+12x$	-2	$30x^2+7x-2$
13	(7x-1)	(4x-3)	$28x^2$	$-4x$	$-21x$	$+3$	$28x^2-25x+3$
14	(9x+4)	(3x-2)	$27x^2$	$+12x$	$-18x$	-8	$27x^2-6x-8$
15	(5x-2)	(5x+2)	$25x^2$	$-10x$	$+10x$	-4	$25x^2-4=25x^2+0x-4$
16	(5x+1)	(10x+2)	$50x^2$	$+10x$	$+10x$	$+2$	$50x^2+20x+2$
17	(3x-1)	(x-12)	$3x^2$	$-1x$	$-36x$	$+12$	$3x^2-37x+12$
18	(3x+5)	(6x+7)	$18x^2$	$+30x$	$+21x$	$+35$	$18x^2+41x+35$
19	(6x+7)	(8x+5)	$48x^2$	$+56x$	$+30x$	$+35$	$48x^2+86x+35$
20	(8x-3)	(7x+5)	$56x^2$	$-21x$	$+40x$	-15	$56x^2+19x-15$

Name_____ICP Factoring using the AC Method 11-30-15

Examples

Quadratic term	Linear term 1	Linear term 2	constant
x^2	$+4x$	$+2x$	$+8$

Factored form of the first two terms: $x(x+4)$

Factored form of the last two terms: $+2(x+4)$

IF there is a BINOMIAL in common, then factor it OUT
Keep all of the rest of the terms in a single parentheses

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

$= x^2+6x+8$

Quadratic term	Linear term 1	Linear term 2	constant
x^2	$+5x$	$+2x$	$+8$

Factored form of the first two terms: $x(x+5)$

Factored form of the last two terms: $+2(x+4)$

IF there is a BINOMIAL in common, then factor it OUT
Keep all of the rest of the terms in a single parentheses

$x^2+5x+2x+8 = x^2+7x+8$

this is NOT FACTORABLE

Quadratic term	Linear term 1	Linear term 2	constant
x^2	$-4x$	$+1x$	-4

Factored form of the first two terms: $x(x-4)$

Factored form of the last two terms: $+1(x-4)$

IF there is a BINOMIAL in common, then factor it OUT
Keep all of the rest of the terms in a single parentheses

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

$= x^2-3x-4$

Quadratic term	Linear term 1	Linear term 2	constant
x^2	$+2x$	$-5x$	-10

Factored form of the first two terms: $x(x+2)$

Factored form of the last two terms: $-5(x+2)$

IF there is a BINOMIAL in common, then factor it OUT
Keep all of the rest of the terms in a single parentheses

$(x+2)(x-5)= x^2+2x-5x-10$

$= x^2-3x-10$

This method of factoring is called the AC method, we have skipped the "hard" step, we'll get to that step after you can takeit from the second step.

If not factorable state so

Quadratic term	Linear term 1	Linear term 2	constant
x^2	+6x	+3x	+18

Factored form of the first two terms: $x(x+6)$

Factored form of the last two terms: $+3(x+6)$

IF there is a BINOMIAL in common, then factor it OUT
Keep all of the rest of the terms in a single parentheses

$(x+6)(x+3)$

Quadratic term	Linear term 1	Linear term 2	constant
x^2	+4x	+6x	+24

Factored form of the first two terms: $x(x+4)$

Factored form of the last two terms: $+6(x+4)$

IF there is a BINOMIAL in common, then factor it OUT
Keep all of the rest of the terms in a single parentheses

$(x+4)(x+6)$

Quadratic term	Linear term 1	Linear term 2	constant
x^2	-6x	+8x	-48

Factored form of the first two terms: $x(x-6)$

Factored form of the last two terms: $8(x-6)$

IF there is a BINOMIAL in common, then factor it OUT
Keep all of the rest of the terms in a single parentheses

$(x-6)(x+8)$

Quadratic term	Linear term 1	Linear term 2	constant
x^2	-6x	-6x	+36

Factored form of the first two terms: $x(x-6)$

Factored form of the last two terms: $-6(x-6)$

IF there is a BINOMIAL in common, then factor it OUT
Keep all of the rest of the terms in a single parentheses

$(x-6)(x-6) = (x-6)^2$

DST

Quadratic term	Linear term 1	Linear term 2	constant
x^2	+3x	-3x	-9

Factored form of the first two terms: $x(x+3)$

Factored form of the last two terms: $-3(x+3)$

IF there is a BINOMIAL in common, then factor it OUT
Keep all of the rest of the terms in a single parentheses

$(x-3)(x+3)$ DOT

Name_____ICP Factoring using the AC Method part 2 11-30-15

If not factorable state so

$x^2-14x-32$	List AC x^2 $-32x^2$	List all of the ways to get AC x^2 $(-4x)(+8x)$ $(1x)(-32x)$ $(2x)(-16x)$	List all the ways factors of AC x^2 can add to Bx $\pm 4x$ $\pm 31x$ $\pm 14x$
Quadratic term x^2	Linear term 1 $-16x$	Linear term 2 $+2x$	constant -32
Factored form of the first two terms $x(x-16)$		Factored form of the last two terms $+2(x-16)$ $(x+16)(x+2)$	
IF there is a BINOMIAL in common, then factor it OUT Keep all of the rest of the terms in a single parentheses			
$x^2-13x+40$	List AC x^2 $40x^2$	List all of the ways to get AC x^2 $(5x)(8x)$ $(2x)(20x)$ $(-5x)(-8x)$ $(4x)(10x)$ $(1x)(40x)$	List all the ways factors of AC x^2 can add to Bx $\pm 13x$ $\pm 14x$ ± 22 $\pm 41x$
Quadratic term x^2	Linear term 1 $-5x$	Linear term 2 $-8x$	constant $+40$
Factored form of the first two terms $x(x-5)$		Factored form of the last two terms $-8(x-5)$ $(x-8)(x-5)$	
IF there is a BINOMIAL in common, then factor it OUT Keep all of the rest of the terms in a single parentheses			
$x^2+3x-54$	List AC x^2 $-54x^2$	List all of the ways to get AC x^2 $(-2x)(27x)$ $(3x)(18x)$ $(-6x)(9x)$	List all the ways factors of AC x^2 can add to Bx $\pm 25x$ $\pm 3x$ $\pm 15x$
Quadratic term x^2	Linear term 1 $-6x$	Linear term 2 $+9x$	constant -54
Factored form of the first two terms $x(x-6)$		Factored form of the last two terms $9(x-6)$ $(x-6)(x+9)$	
IF there is a BINOMIAL in common, then factor it OUT Keep all of the rest of the terms in a single parentheses			

If not factorable state so

$x^2-12x+35$	List AC x^2	List all of the ways to get AC x^2	List all the ways factors of AC x^2 can add to Bx
	$35x^2$	$(5x)(7x)$ $(1x)(35x)$	$\pm 12x$ $\pm 36x$

Quadratic term	Linear term 1	Linear term 2	constant
x^2	$+5x$	$+7x$	$+35$

Factored form of the first two terms

$x(x+5)$

Factored form of the last two terms

$+7(x+5)$

$(x+5)(x+7)$

IF there is a BINOMIAL in common, then factor it OUT
Keep all of the rest of the terms in a single parentheses

$x^2+22x-48$	List AC x^2	List all of the ways to get AC x^2	List all the ways factors of AC x^2 can add to Bx
	$-48x^2$	$(1x)(48x)$ $(6x)(8x)$ $(2x)(24x)$ $(3x)(16x)$ $(4x)(12x)$	$\pm 47x$ $\pm 8x$ $\pm 22x$ $\pm 2x$ $\pm 13x$

Quadratic term	Linear term 1	Linear term 2	constant
x^2	$+24x$	$-2x$	-48

Factored form of the first two terms

$x(x+24)$

Factored form of the last two terms

$-2(x+24)$

$(x+24)(x-2)$

IF there is a BINOMIAL in common, then factor it OUT
Keep all of the rest of the terms in a single parentheses

$x^2-20x+60$	List AC x^2	List all of the ways to get AC x^2	List all the ways factors of AC x^2 can add to Bx
	$60x^2$	$1x\ 60x$ $5x\ 6x$ $2x\ 30x$ $3x\ 10x$ $4x\ 15x$	$\pm 61x$ $+13x$ $\pm 11x$ $\pm 32x$ $\pm 19x$

Quadratic term	Linear term 1	Linear term 2	constant

Factored form of the first two terms

Factored form of the last two terms

not factorable.

IF there is a BINOMIAL in common, then factor it OUT
Keep all of the rest of the terms in a single parentheses