Circles – Factoring Trinomials

Hw Section 11.2 Name_____

Factor by Australian Method.

#1) $3p^2 - 2p - 5$

$= \frac{(3p-5)(3p+3)}{3}$

$= \frac{(3p-5)\cancel{3}(p+1)}{\cancel{3}}$

$= (3p-5)(p+1)$

$M = -15$
$A = -2$
$N = -5, 3$

#2) $2x^2 + 3x - 9$

$= \frac{(2x+6)(2x-3)}{2}$

$= \frac{2(x+3)(2x-3)}{2}$

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

$M = -18$
$A = 3$
$N = +6, -3$

#3) $16x^2 - 40x + 25$

$= \frac{(16x-20)(16x-20)}{16}$

$= \frac{\cancel{4}(4x-5)\cancel{4}(4x-5)}{\cancel{16}}$

$= (4x-5)^2$

$M = 400$
$A = -40$
$N = -20, -20$

#4) $4x^2 - 4x + 1$

$= \frac{(4x-2)(4x-2)}{4}$

$= \frac{\cancel{2}(2x-1)\cancel{2}(2x-1)}{\cancel{4}}$

$= (2x-1)^2$

$M = 4$
$A = -4$
$N = -2, -2$

#5) $2x^2 + 11x + 5$

$= \frac{(2x+1)(2x+10)}{2}$

$= \frac{(2x+1)\cancel{2}(x+5)}{\cancel{2}}$

$= (2x+1)(x+5)$

$M = 10$
$A = 11$
$N = 1, 10$

#6) $2x^2 + 5x + 2$

$= \frac{(2x+1)(2x+4)}{2}$

$= \frac{(2x+1)\cancel{2}(x+2)}{\cancel{2}}$

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

$M = 4$
$A = 5$
$N = 1, 4$

#7) $7x^2 + 53x + 28$

$= \frac{(7x+4)(7x+49)}{7}$

$= \frac{(7x+4)\cancel{7}(x+7)}{\cancel{7}}$

$= (7x+4)(x+7)$

$M = 196$
$A = 53$
$N = 4, 49$

#8) $3 + 6x + 3x^2$

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

GCF = 3

$= 3(x^2 + 2x + 1)$

$= \frac{3(x+1)(x+1)}{1}$

$= 3(x+1)^2$

$M = 1$
$A = 2$
$N = 1, 1$

#9) $100x^2 + 180x + 81$

$= \frac{(100x+90)(100x+90)}{100}$

$= \frac{\cancel{10}(10x+9)\cancel{10}(10x+9)}{\cancel{100}}$

$= (10x+9)^2$

$M = 8100$
$A = 180$
$N = 90, 90$

#10) $10x^2 + 100x + 250$

GCF = 10

$= 10(x^2 + 10x + 25)$

$= \frac{10(x+5)(x+5)}{1}$

$= 10(x+5)^2$

$M = 25$
$A = 10$
$N = 5, 5$

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#11) $4x^2 - 15x - 25$

$= \frac{(4x-20)(4x+5)}{4}$

$= \frac{4(x-5)(4x+5)}{4}$

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

$M = -100$

$A = -15$

$N = -20, 5$

#12) $4x^2 - 35x + 49$

$= \frac{(4x-7)(4x-28)}{4}$

$= \frac{(4x-7)4(x-7)}{4}$

$= (4x-7)(x-7)$

$M = 196$

$A = -35$

$N = -7, -28$

#13) $4x^2 - 17x + 4$

$= \frac{(4x-1)(4x-16)}{4}$

$= \frac{(4x-1)4(x-4)}{4}$

$= (4x-1)(x-4)$

$M = 16$

$A = -17$

$N = -1, -16$

#14) $6x^2 + 7x - 49$

$= \frac{(6x-14)(6x+21)}{6}$

$= \frac{2(3x-7)3(2x+7)}{6}$

$= (3x-7)(2x+7)$

$M = -294$

$A = 7$

$N = -14, 21$

#15) $6x^2 + 37x + 6$

$= \frac{(6x+1)(6x+36)}{6}$

$= \frac{(6x+1)6(x+6)}{6}$

$= (6x+1)(x+6)$

$M = 36$

$A = 37$

$N = 1, 36$