Mathematics 11U

2.3c – Factoring Special Cases

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Differences of Squares

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

$= 4x^2 + 10x - 10x - 25$

$= 4x^2 - 25$

$9x^2 - 49$

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

1) $x^2 - 9$

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

2) $4x^2 - 25$

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

3) $7k^2 - 252$

$= 7(k^2 - 36)$

$= 7(k-6)(k+6)$

4) $640x^2 - 490$

$= 10(64x^2 - 49)$

$= 10(8x-7)(8x+7)$

Perfect Squares

$(3x-5)^2$

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

$= 9x^2 - 15x - 15x + 25$

$= 9x^2 - 30x + 25$

$2(3x)(5) = 2(15x) = 30x$

$(2x-7)^2$

$4x^2 - 28x + 49$

$(4x+3)^2$

$= 16x^2 + 24x + 9$

$4 \quad 3$

5) $16n^2 - 40n + 25$

$= (4n - 5)^2$

(x) 400

(+) -40

-20, -20

6) $49n^2 - 28n + 4$

$= (7n - 2)^2$

7) $16r^2 + 51r + 9$

not a P.S.

(x) 144

(+) 51

8) $125x^2 + 200x + 80$

$= 5(25x^2 + 40x + 16)$

$= 5(5x + 4)^2$