III. Perfect Square Trinomials:

Square each of the following binomials:

$(x+3)^2$

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

$x^2+3x+3x+9$

x^2+6x+9

$(5x+4)^2$

$\downarrow \times 2$

$25x^2+40x+16$

$(3x-1)^2$

$9x^2-6x+1$

Factor the following trinomial: $9w^2+48w+64$

$(3w+8)^2$

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$(7x-2)^2 = 49x^2-28x+4$

$(6x+5)^2 = 36x^2+60x+25$

$(6x+5)(6x+5)$

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How will we reverse this process and FACTOR a perfect square trinomial?

Factor the following trinomial: $25w^2 + 40w + 16$

$(5w+4)^2$

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II. Perfect Square Trinomials

Criteria...
- three terms: the first and last are perfect squares.
- $\sqrt{}$ of the first & $\sqrt{}$ of the last then double equals the coefficient of the middle term.
- factors like this...

$$a^2 + 2ab + b^2 = (a + b)^2$$

OR

$$a^2 - 2ab + b^2 = (a - b)^2$$

- recognize them and you save yourself the decomposition steps!!!

EXAMPLES...

1) $25x^2 - 10x + 1$ M 25, A -10, N -5, -5

$25x^2 - 5x - 5x + 1$

$5x(5x-1) - 1(5x-1)$

$(5x-1)(5x-1)$

$(5x-1)^2$

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

$(3x+4)^2$

Sep 10-10:21 AM

Math 10 Name_____

Factoring: Difference of Squares and Perfect Squares Date_____

Factor each completely.

1) $n^2 - 9$ $(n+3)(n-3)$

2) $25a^2 - 9$

3) $k^2 - 4$

4) $16x^2 - 9$

5) $x^2 - 25$

6) $25x^2 - 16y^2$

7) $u^2 - 16v^2$

8) $u^2 - 9v^2$

9) $4x^2 - y^2$

10) $a^2 - 25b^2$

11) $9m^2 + 12m + 4$

12) $16r^2 + 8r + 1$

13) $25x^2 - 20x + 4$

14) $16n^2 + 40n + 25$

15) $9b^2 - 24b + 16$

16) $16m^2 - 24mn + 9n^2$

17) $9x^2 - 6xy + y^2$

18) $25x^2 + 10xy + y^2$

19) $x^2 - 8xy + 16y^2$

20) $9x^2 + 24xy + 16y^2$

Answers to Factoring: Difference of Squares and Perfect Squares (ID: 1)

1) $(n+3)(n-3)$ 2) $(5a+3)(5a-3)$ 3) $(k+2)(k-2)$ 4) $(4x+3)(4x-3)$
5) $(x+5)(x-5)$ 6) $(5x+4y)(5x-4y)$ 7) $(u+4v)(u-4v)$ 8) $(u+3v)(u-3v)$
9) $(2x+y)(2x-y)$ 10) $(a+5b)(a-5b)$ 11) $(3m+2)^2$ 12) $(4r+1)^2$
13) $(5x-2)^2$ 14) $(4n+5)^2$ 15) $(3b-4)^2$ 16) $(4m-3n)^2$
17) $(3x-y)^2$ 18) $(5x+y)^2$ 19) $(x-4y)^2$ 20) $(3x+4y)^2$

Nov 28-8:59 PM

Decompostion Questions...

1) $2x^2 + 15x + 25$ M 50, A 15, N 10 5

$2x^2 + 5x + 10x + 25$

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

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

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Review - Factoring.pdf

Factoring Review Name_____

Math 10 (Numbers, Functions and Relations 10)

Factor the common factor out of each expression.

1) $20r^5 + 4r^2 - 40$

2) $-5x^3 - 5x^2 - 5x$

3) $12n^5 - 48n^2 + 42n$

4) $-56a^7 + 48a^6 + 16a^3$

Factor each completely.

5) $x^2 + x - 56$

6) $6n^2 - 6n - 120$

7) $4k^2 - 24k - 28$

8) $x^2 - 3x - 18$

9) $b^2 - 7b - 8$

10) $a^2 + 13a + 30$

11) $30n^2 - 24n - 72$

12) $5x^2 - 21x - 54$

13) $16n^2 - 164n + 288$

14) $54x^2 - 90x$

15) $4x^2 + 6x$

16) $6n^2 - 5n + 1$

17) $4r^2 + 7r - 2$

18) $4n^2 - 4n - 35$

19) $6v^2 - 14v$

Answers to Math 10 (Numbers, Functions and Relations 10)

1) $4(5r^5 + r^2 - 10)$
2) $-5x(x^2 + x + 1)$
3) $6n(2n^4 - 8n + 7)$
4) $8a^3(-7a^4 + 6a^3 + 2)$
5) $(x + 8)(x - 7)$
6) $6(n - 5)(n + 4)$
7) $4(k + 1)(k - 7)$
8) $(x - 6)(x + 3)$
9) $(b - 8)(b + 1)$
10) $(a + 3)(a + 10)$
11) $6(5n + 6)(n - 2)$
12) $(5x + 9)(x - 6)$
13) $4(n - 8)(4n - 9)$
14) $18x(3x - 5)$
15) $2x(2x + 3)$
16) $(3n - 1)(2n - 1)$
17) $(r + 2)(4r - 1)$
18) $(2n + 5)(2n - 7)$
19) $2v(3v - 7)$

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Oct 18-12:14 PM

Attachments

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