3.6 Polynomials of the Form $ax^2 + bx + c$

Worksheet: GCF, Simple Trinomials & Hard Trinomials
Questions: 1-12

Math 10 Name_____

GCF, Simple Trinomials, Hard Trinomials Date_____

Choose a factoring Method and factor each completely:

1) $-9n^5 + 6n^3$

2) $36r^6 + 54r - 45$

3) $-40 + 4b^2 - 32b^4$

4) $4xy^2 + 20x^2y + 16xy$

5) $x^2 + 13x + 42$

6) $x^2 + 13x + 36$

7) $k^2 + k - 12$

8) $a^2 + 4a - 45$

9) $2p^2 + 11p - 63$

10) $3n^2 + 11n - 20$

11) $4n^2 - 4n - 15$

12) $6n^2 - 29n + 20$

1) $-9n^5 + 6n^3$

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

2) $36r^6 + 54r - 45$

$9(4r^6 + 6r - 5)$

3) $-40 + 4b^2 - 32b^4$

$4(-10 + b^2 - 8b^4)$

4) $4xy^2 + 20x^2y + 16xy$

$4xy(y + 5x + 4)$

5) $x^2 + 13x + 42$

$(x + 6)(x + 7)$

6) $x^2 + 13x + 36$

$(x + 9)(x + 4)$

7) $k^2 + k - 12$

$(k + 4)(k - 3)$

8) $a^2 + 4a - 45$

$(a - 5)(a + 9)$

9) $2p^2 + 11p - 63$

$(2p - 7)(p + 9)$

10) $3n^2 + 11n - 20$

$(3n - 4)(n + 5)$

11) $4n^2 - 4n - 15$

$(2n + 3)(2n - 5)$

12) $6n^2 - 29n + 20$

$(n - 4)(6n - 5)$

3.8 Factoring Special Polynomials

Difference of Squares

- two terms that are perfect squares.
- must be a difference
- factor like this...

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

EXAMPLES...

$(2x)^2-(7)^2$

1) $4x^2 - 49$

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

$(4x)^2-(3y)^2$

2) $16x^2 - 9y^2$

$(4x-3y)(4x+3y)$

3) $81z^4 - 625$

$(9z^2+25)(9z^2-25)$

4) $49w^2 - 4s^2$

$(7w-2s)(7w+2s)$

Perfect Square Trinomials

- three terms: the first and last are perfect squares.
- 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...

$(5x)^2$ $(1)^2$

1) $25x^2 - 10x + 1$

$(5x - 1)^2$

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

$(3x + 4)^2$

Factor using Perfect Squares Method

$25x^2 - 120x + 144$

$(5x-12)^2$

$81x^2 - 180x + 100$

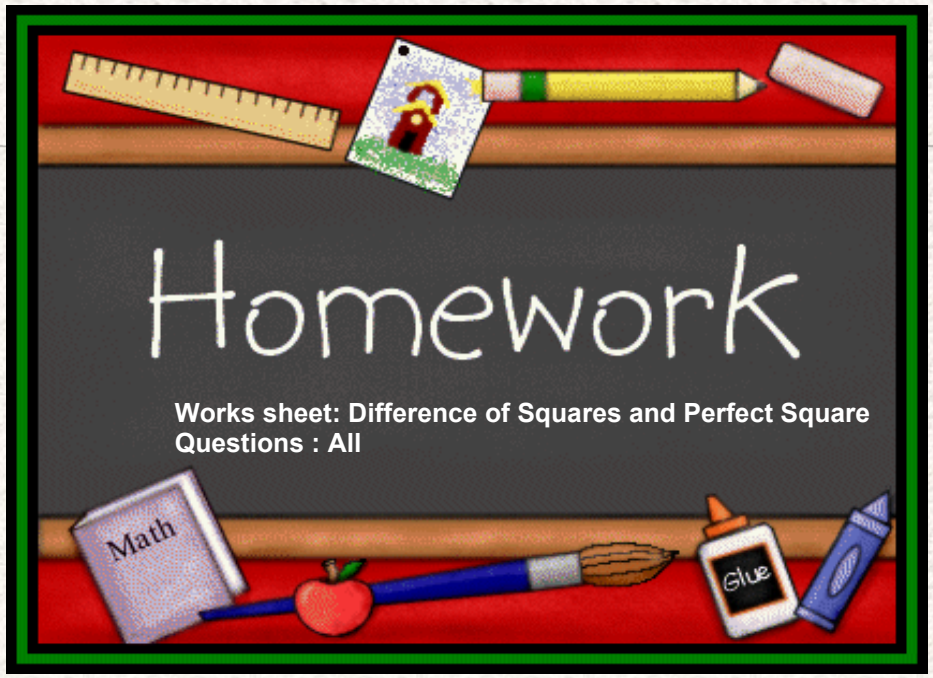
$(9x-10)^2$

$49x^2 + 84x + 36$

$(7x+6)^2$

$36x^2 + 132x + 121$

$(6x+11)^2$


Homework
Works sheet: Difference of Squares and Perfect Square
Questions : All
Math
Glue

Math 10 Name_____

Factoring: Difference of Squares and Perfect Squares

Date_____

Factor each completely.

1) $n^2 - 9$

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

1) $n^2 - 9$

$(n + 3)(n - 3)$

2) $25a^2 - 9$

$(5a + 3)(5a - 3)$

3) $k^2 - 4$

$(k + 2)(k - 2)$

4) $16x^2 - 9$

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

5) $x^2 - 25$

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

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

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

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

$(u + 4v)(u - 4v)$

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

$(u + 3v)(u - 3v)$

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

$(2x + y)(2x - y)$

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

$(a + 5b)(a - 5b)$

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

$(3m + 2)^2$

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

$(4r + 1)^2$

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

$(5x - 2)^2$

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

$(4n + 5)^2$

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

$(3b - 4)^2$

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

$(4m - 3n)^2$

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

$(3x - y)^2$

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

$(5x + y)^2$

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

$(x - 4y)^2$

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

$(3x + 4y)^2$

Attachments

Chapter 3 (Factors & Products) Review.pdf