

Ms. S. White's contact info

# Algebra 1

Please join the remind app for her class. Can be through text, email or app notifications. You can use this to ask me questions, get help or to take a picture of your assignment to submit them.

**1st period Algebra:**

Using smartphone <http://rmd.at/e2h3bbh>

For text notifications: Text the message @e2h3bbh to the number 81010.

**2nd period Algebra:**

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My email address is [shannon.white@crooksville.k12.oh.us](mailto:shannon.white@crooksville.k12.oh.us)

Please contact me if you have any questions as I am here to help you. Quickest way to get ahold of me is through the remind app.

# Algebra 1

Mslwhite

## Factoring Difference of Squares

Difference of Squares are of the form  $a^2 - b^2$

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

Ex 1

$$x^2 - 25 \quad ax^2 + bx + c$$

old way

$$b = 0 \quad a \cdot c = 1(-25) = -25$$

1	-25	-1	25
5	-5	-5	5

↑ or ↑  
add to be 0

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

Ex 2

$$x^2 - 49$$

$$x^2 - 7^2$$

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

Ex 3

$$4a^2 - 16$$

$$(2a)^2 - 4^2$$

$$(2a - 4)(2a + 4)$$

Ex 5

$$18b^2 - 50$$

$$2(9b^2 - 25)$$

$$2[(3b)^2 - 5^2]$$

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

## Difference Of Squares Assignment

Date \_\_\_\_\_ Period \_\_\_\_\_

**Factor each completely.**

1)  $m^2 - 9$

2)  $16m^2 - 9$

3)  $25m^2 - 16$

4)  $x^2 - 16$

5)  $25k^2 - 4$

6)  $9x^2 - 25$

7)  $m^2 - 1$

8)  $9n^2 - 4$

9)  $4r^2 - 9$

10)  $4m^2 - 25$

11)  $16n^2 - 100$

12)  $18n^2 - 8$

13)  $4x^2 - 16$

14)  $27v^2 - 12$

15)  $16n^2 - 36$

Perfect Square

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

$$a^2 + \underline{1ab} + \underline{1ab} + b^2$$

$$a^2 + 2ab + b^2$$

Matches sign in binomial

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

$$a^2 - \underline{1ab} - \underline{1ab} + b^2$$

$$a^2 - 2ab + b^2$$

Ex 1 factor

$$x^2 + 14x + 49$$

$$a = x \quad b = 7$$

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

$$(x+7)^2$$

$b = 14$	$ac = 1(49)$
1.49	-1.49
7.7	-7.7

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

$$(x+7)^2$$

Ex 2

$$x^2 - 8x + 16$$

$$a = x \quad b = 4$$

$$a^2 - 2ab + b^2$$

$$(x-4)^2$$

$b = -8$	$ac = 1 \cdot 16$
1.16	-1.16
2.8	-2.8
4.4	-4.4

$$(x-4)(x-4)$$

$$(x-4)^2$$

Ex 3  $9x^2 - 30x + 25$

$$a = 3x \quad b = 5$$

$$a^2 - 2ab + b^2$$

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

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

$b = -30$	$ac = 9 \cdot 25$
1.225	-1.225
3.75	-3.75
5.45	-5.45
9.25	-9.25
15.15	-15.15

$$\left(\frac{x-15}{9}\right)\left(\frac{x-15}{9}\right)$$

$$\left(\frac{x-5}{3}\right)\left(\frac{x-5}{3}\right)$$

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

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

Ex 4

$$4x^2 + 12x + 9$$

$$2ac = 2(2x)(3) = 12x$$

$$a = 2x \quad b = 3$$

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

$b = 12$	$ac = 4 \cdot 9 = 36$
1.36	-1.36
2.18	-2.18
3.12	-3.12
4.9	-4.9
6.6	-6.6

$$\left(\frac{x+6}{4}\right)\left(\frac{x+6}{4}\right)$$

$$\left(x+\frac{3}{2}\right)\left(x+\frac{3}{2}\right)$$

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

## Perfect Square Binomials Assignment

**Factor each completely.**

1)  $9x^2 - 12x + 4$

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

3)  $16m^2 - 8m + 1$

4)  $a^2 - 10a + 25$

5)  $25n^2 + 20n + 4$

6)  $b^2 + 6b + 9$

7)  $9b^2 + 30b + 25$

8)  $p^2 - 4p + 4$

9)  $25m^2 - 20m + 4$

10)  $25x^2 + 30x + 9$

11)  $4v^2 + 16v + 16$

12)  $36n^2 - 24n + 4$

13)  $8a^2 + 40a + 50$

14)  $80m^2 - 200m + 125$

15)  $3x^2 - 24x + 48$

## Factor Review Assignment 2

Date \_\_\_\_\_ Period \_\_\_\_\_

**Factor the common factor out of each expression.**

1)  $-30n^3 - 21n - 15$

2)  $-12m^6 - 18m^5 - 30m^4$

3)  $7x^2y^6 + xy^6 + 7xy^4$

4)  $-60y - 50yx + 80y^3x^2$

5)  $30a^2b^2 + 12ab^2 - 24ab + 18a$

**Factor each completely.**

6)  $n^2 + n - 2$

7)  $k^2 + 5k - 24$

8)  $5n^2 - 50n$

9)  $7p^2 + 44p - 35$

10)  $2k^2 - 11k - 63$

11)  $5n^2 + 8n$

# Factor Rev 2 p. 2

12)  $10x^2 + 23x + 9$

13)  $9n^2 + 61n - 14$

14)  $16r^2 - 44r - 80$

15)  $10k^2 + 80k$

16)  $a^2 - 25$

17)  $r^2 - 9$

18)  $25n^2 - 4$

19)  $125n^2 - 80$

20)  $125p^2 - 20$

21)  $m^2 + 6m + 9$

22)  $n^2 + 4n + 4$

23)  $4m^2 + 12m + 9$

24)  $75a^2 + 60a + 12$

25)  $8m^2 + 40m + 50$