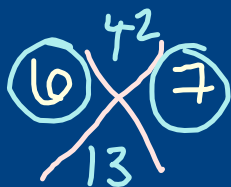


Wednesday, January 18th

1) Factor: $x^2 + 13x + 42$

$a = 1$ $b = 13$ $c = 42$



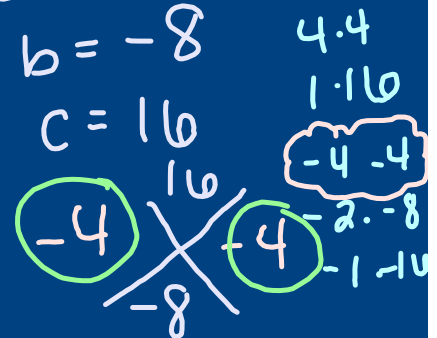
- 1 · 42 -1 · -42
- 2 · 21 -2 · -21
- 3 · 14 -3 · -14
- 6 · 7 -6 · -7

	x	6
x	x^2	$6x$
7	$7x$	42

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

2) Factor: $x^2 - 8x + 16$

$a = 1$ $b = -8$ $c = 16$



	x	-4
x	x^2	$-4x$
-4	$-4x$	16

$(x - 4)(x - 4)$
 $= (x - 4)^2$

Check your homework...

U7 Day 6 Homework

1) B *2) D *3) A 4) B

Algebra 1

Name _____ ID: 1

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U7 Day 6 Homework

Date _____ Period _____

Factor the common factor out of each expression.

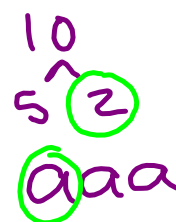
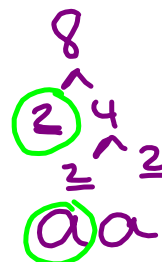
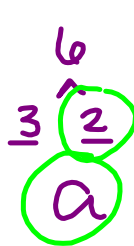
1) $-5x^2 - 4x$

- A) $-x(4x + 5)$
- B) $-x(5x + 4)$
- C) $-x^2(5x + 4)$
- D) $-x^2(5x^2 + 20x)$

2) $6a + 8a^2 + 10a^3$

- A) $2(3 + 20a + 20a^2)$
- B) $2a^2(3 + 4a^2 + 5a^3)$
- C) $2a(6a + 8a^2 + 10a^4)$
- D) $2a(3 + 4a + 5a^2)$

$2a(3 + 4a + 5a^2)$

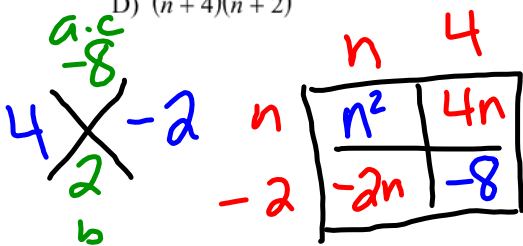


Factor each completely.

3) $n^2 + 2n - 8$

- A) $(n + 4)(n - 2)$
- B) $(n - 2)(n + 3)$
- C) $(n + 2)(n - 4)$
- D) $(n + 4)(n + 2)$

$a = 1$
 $b = 2$
 $c = -8$



$4 \cdot -2$
 $-4 \cdot 2$

$-1 \cdot 8$
 $1 \cdot -8$

$(n + 4)(n - 2)$
or
 $(n - 2)(n + 4)$

4) $m^2 + 14m + 45$

- A) $(m - 6)(m - 3)$
- B) $(m + 5)(m + 9)$
- C) $(m - 7)(m + 3)$
- D) $(m + 5)(m - 9)$

Important Upcoming Dates

Next Quiz: Friday, January 20th* *don't forget*

GCF, Factoring (a=1), and Factoring (a not 1)

*to make a
notecard*

Next Test: Tuesday, January 24th

Everything from Unit 7

Day 7: Factoring, a not 1

Review...

Factor the following expressions.

1) $6x^2 - 15x$ **GCF**

$\begin{matrix} 6 \\ 3 \end{matrix}$ $\begin{matrix} 15 \\ 5 \end{matrix}$
 $\begin{matrix} 2 \\ 3 \end{matrix}$ $\begin{matrix} 3 \\ 3 \end{matrix}$
 $\begin{matrix} x \\ x \end{matrix}$ $\begin{matrix} x \\ x \end{matrix}$

gcf = $3x$

$3x(2x - 5)$

b) $x^2 - 4x - 12$ **Factor with box**

$a=1$ $b=-4$ $c=-12$

$-6 \cdot 2 = -12$
 $-4 \cdot 3 = -12$

	x	-6
x	x^2	$-6x$
2	$2x$	-12

When factoring quadratic trinomials, we have used the box method. To use this method, you need a X and a 2x2 box.

General form of a quadratic trinomial is $ax^2 + bx + c$

When filling in the x, what goes on top? $a \cdot c$

When filling in the x, what goes on the bottom? b

Today, we will be talking about factoring trinomials when a is not 1. We will still use the x and the box to help us factor and the steps will be the same.

Before we begin, lets practice filling out x's.

Remember, you want **factors** of the top number that add to the bottom number.

$\begin{matrix} 16 \\ 17 \end{matrix}$ $\begin{matrix} 1 & 16 \\ -4 & -3 \end{matrix}$	$\begin{matrix} 12 \\ -7 \end{matrix}$ $\begin{matrix} 4 & 3 \\ -4 & -3 \end{matrix}$	$\begin{matrix} 3 \\ 4 \end{matrix}$ $\begin{matrix} 1 & 3 \\ -1 & -3 \end{matrix}$	$\begin{matrix} 72 \\ -18 \end{matrix}$ $\begin{matrix} -6 & -12 \\ -6 & -12 \end{matrix}$
$8 \cdot 2$ $1 \cdot 16$ $4 \cdot 4$ $-8 \cdot -2$ $-1 \cdot -16$ $-4 \cdot -4$	$4 \cdot 3$ $2 \cdot 6$ $1 \cdot 12$ $-4 \cdot -3$ $-2 \cdot -6$ $-1 \cdot -12$	$1 \cdot 3$ $-1 \cdot -3$	$1 \cdot 72$ $2 \cdot 36$ $3 \cdot 24$ $4 \cdot 18$ $6 \cdot 12$ $8 \cdot 9$ $-1 \cdot -72$ $-2 \cdot -36$ $-3 \cdot -24$ $-4 \cdot -18$ $-6 \cdot -12$ $-8 \cdot -9$

Example: $5v^2 + 27v + 10$

$a=5$ $b=27$ $c=10$

Steps (written out)	Steps (worked out)
1) Multiply a and c together. Place that number in the top of the x .	$a \cdot c$ 50
Place b in the bottom of the x .	
Find two numbers that multiply to get the top number and add to get the bottom number.	$1 \cdot 50$ $-1 \cdot -50$ $2 \cdot 25$ $-2 \cdot -25$ $5 \cdot 10$ $-5 \cdot -10$
2) Create a 2×2 box and place the first term of your original trinomial in the first box. Place the last term of your original trinomial in the last box.	
Fill in the remaining 2 boxes with the numbers on the left and right of your x from above. Be sure to place an x after each number.	
3) Find the GCF of each row and column and write it in the corresponding area. Write these as the two binomials for the factored form.	$+5$ $+2$
4) Check you work by multiplying the binomials together to see if you get your original trinomial.	Factored Form: $(5v+2)(1v+5)$

2) $3x^2 + 8x + 5$ $a \cdot c$
 $5x+3x$ 15
 $a=3$ 5 3
 $b=8$ 8
 $c=5$ b

$(x+1)(3x+5)$

3) $4a^2 - a - 5$ $a \cdot c$
 $a=4$ -20
 $b=-1$ -5
 $c=-5$ -1 b

$1 \cdot -20$
 $2 \cdot -10$
 $4 \cdot -5$
 $-1 \cdot 20$
 $-2 \cdot 10$
 $-4 \cdot 5$

$4a$ $4a^2$ $4a$
 -5 $-5a$ -5

$4a+1$

40
 $2 \cdot 20$ $2 \cdot 20$
 $a \cdot a$ $a \cdot a$

5 5
 $2 \cdot 2$ $2 \cdot 2$
 $a \cdot a$ $a \cdot a$

4 4
 $2 \cdot 2$ $2 \cdot 2$
 $a \cdot a$ $a \cdot a$

$(4a-5)(a+1)$

Complete circled problems for homework.

4) $4x^2 - 11x + 6$

5) $3x^2 + 17x + 10$

6) $6x^2 - 5x - 1$

7) $2m^2 + 5m + 2$

8) $6m^2 - 11m - 10$

9) $4v^2 - v - 14$

Send one person from each group to get enough iRespond remotes for everyone in your group.

You only need a calculator on your desk and a marker. Please put everything else away.

TOTD - January 18th

Factor each completely.

1) $m^2 - 12m + 20$

- A) I am completely lost.
- B) $(m - 10)(m - 2)$
- C) $(m + 10)(m + 2)$
- D) $(m - 8)(m + 2)$
- E) I got part of the way and then got stuck.

2) $4x^2 + 7x + 3$

- A) I am completely lost.
- B) $(x - 3)(4x - 5)$
- C) I got part of the way and then got stuck.
- D) $(x + 1)(4x + 3)$
- E) $(x - 1)(4x + 3)$