Applications

Agenda

Warm-Up

Teach Piece

Stations

HW #1,2,6

Begin Review

Reminders

Test Wednesday

HW 4.6 due Wed!!

Test corrections due next Friday!!

No School on Monday

~~Warm-Up Friday~~

a: 24 b: -49 c: 2

Which binomial is a factor of $24x^2 - 49x + 2$?

A. $x - 2$

B. $x - 1$

C. $x + 1$

D. $x + 2$

$ac = 24(2)$

48

1 | 48 = 49

-1 | -48 = -49

↑ Add to b

-49

$24x - 1$

x | $24x^2$ | $-1x$

-2 | $-48x$ | $+2$

$(24x - 1)(x - 2)$

*CAN ONLY CHECK FINAL ANSWER

Questions, Comments, Concerns?

What Do You Call a Bunch of...

1. Sheep stuck in a sauna? Wool sweaters
2. Wolves not feeling well? A stuck pack
3. Salmon jammed together in a river? Grid Lox

Write the expression in factored form, then find your answer in the answer column below. Each time the exercise number appears in the code, write the letter of the answer in the space above it. If the answer has a ●, leave the space blank.

(13) $7h^4+9h^3+2h^2$

$h^2(7h^2+9h+2)$

a:7 b:9 c:2

a·c = 14

1 | 14

2 | 7 = 9

↑ Add to 9

$7h+2$

$1h$ | $7h^2$ | $+2h$

$+1$ | $+7h$ | $+2$

$h^2(7h+2)(h+1)$

13	$7h^4 + 9h^3 + 2h^2$
14	$50h^4 - 32h^2$
15	$36h^3 - 60h^2 - 144h$
16	$30h^4 + 25h^3 - 5h^2$
17	$98h^5 - 2h$
18	$75h^4 + 60h^3 + 12h^2$

Answers 13-18

U	$3h^2(5h+1)(h+4)$
R	$5h^2(6h-1)(h+1)$
F	$h^2(7h+2)(h+1)$
H	$2h^2(5h-4)^2$
K	$12h(3h+4)(h-3)$
O	$3h^2(5h+2)^2$
B	$5h^2(3h-1)(2h+1)$
●	$2h^2(5h+4)(5h-4)$
F	$h^2(7h+1)(h+2)$
S	$2h(7h^2+1)(7h^2-1)$
N	$12h(3h+2)(h-6)$

PUNCHLINE • Algebra • Book B

Applications

P. 84

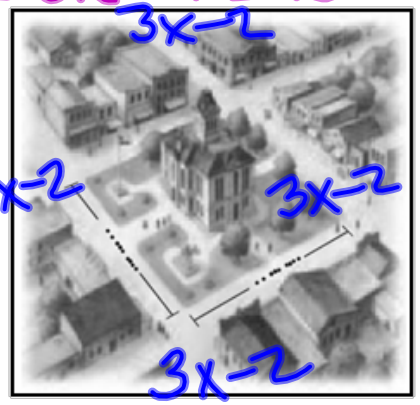
EQ: How do I solve word problems involving factoring?

1. Many Texas courthouses are at the center of a town square. The area of the town square shown is $(9x^2 - 12x + 4)\,ft^2$.

Area: inside box

a:9 b:-12 c:4 dimension (length/width): side of box

A. Find the dimensions of the town square.



$3x \quad -2$

$3x \mid 9x^2 \mid -6x$

$-2 \mid -6x \mid +4$

$(3x-2)(3x-2)$ (L) (W)

ac = 36

1	36
2	18
3	12
4	9

$-4 - 9 = -12$

B. Write an expression for the perimeter of the town square

↑ add all sides

$4(3x-2) = \boxed{12x - 8}$ ft

C. Solve for the perimeter of the town square when $x = 80$ feet.

$12(80) - 8 = \boxed{952}$ ft

Applications

$A = l * w$

2. The area of a rectangular lot can be represented by $(8x^2 + 2x - 3)\ ft^2$.

If the width of the lot is $(4x + 3)$ ft, what is its length?

dimension

A. $2x - 1$

B. $8x + 3$

C. $8x - 3$

D. $2x + 1$

	$4x$	$+3$
$2x$	$8x^2$	$6x$
-1	$-4x$	-3

CALC

$Y_1 = 8x^2 + 2x - 3$

$Y_2 =$ (Answer choice)$(4x+3)$

2nd GRAPH

Applications

You will work through the 5 stations. Today will be another participation grade. Your HW this weekend is #1, 2, and 6 on the Applications HW and to begin looking at the test review.

HW 4.6 is due WEDNESDAY on TEST day!!

Station 1

The area of a Mac laptop screen can be modeled by the expression $(11x^2 + 25x - 24)$ square inches. What are the dimensions for the screen?

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Station 2

A clothing store has a rectangular clearance section with a length that is twice the width, w. During a sale, the section is expanded to an area of $(2w^2 + 19w + 35)\,ft^2$.

A. Find the dimensions of the clearance area including the expanded area.

B. Find the amount of the increase in length and width of the clearance section.

Station 3

Jayne needs to cut a rectangular piece of cloth to make a tablecloth. The area needed is $(16x^2 - 24x + 9)\,in^2$.

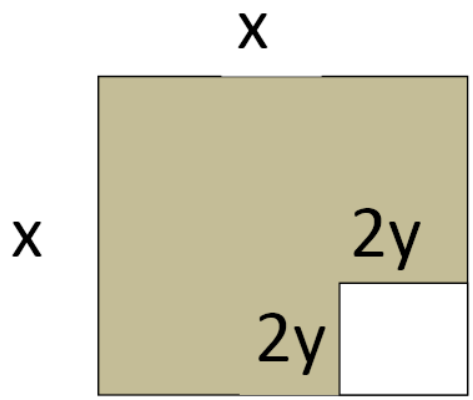
A. Find the dimensions of the cloth.

B. Jayne wants to trim the tablecloth with piping. Write an expression for the perimeter of the tablecloth.

C. Find the perimeter of the cloth when $x = 11$ inches.

Station 4

The floor plan of a daycare center is shown below. The arts and crafts area in the lower right corner is not carpeted. The rest of the center is carpeted. Choose the expression, in factored form, that best represents the area of the floor that is carpeted.



A. $(x+2y)^2$

B. $(x-2y)^2$

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

D. $(2x-4y)$

Station 5

A ball is kicked straight up in to the air. The height of the ball in feet is given by the expression $-16t^2 + 16t + 4$ where t is time in seconds.

A. Factor the expression.

B. Find the height of the ball at 1 second.

#1, 2, 6

Algebra I – Unit 8: Topic 1 – Applications of Factoring

Practice – Applications of Factoring **pp 524-571**

Name _____ Date _____ Period _____

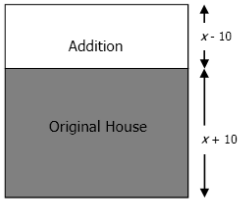
1. The Parthenon in Athens, Greece, is an ancient structure that has a rectangular base. The area of the base is modeled by the expression $3t^2 - 11t + 10$ *square meters*. What are the dimensions of the base?

2. The area of a rectangular room is given as $x^2 - 16x + 63$ square feet. If the width of room is $(x - 7)$, what is the length?

The figure shows the plans for an addition on the back of a house.
Use the figure to answer questions 3-5.

3. The area of the addition is $(x^2 + 10x - 200)\,ft^2$. What is its length?

4. What is the area of the original house?



5. The homeowners decide to extend the addition. The area with the addition is now $(x^2 + 12x - 160)\,ft^2$. By how many feet was the addition extended?

6. The area of a soccer field is $(6x^2 + 25x + 25)$ *square meters*. The width of the field is $(2x + 5)$ *meters*. What is the length of the field?

7. For a certain college, the number of applications received after x recruiting seminars is modeled by the polynomial $3x^2 + 490x + 6000$. What is this expression in its factored form?

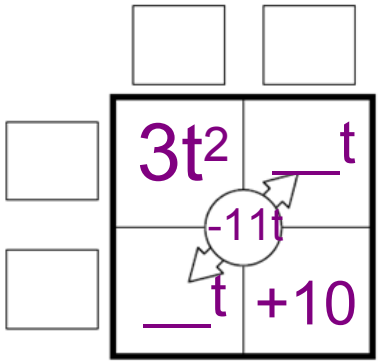
HW Help: Applications

No Work = No Credit = No Kidding

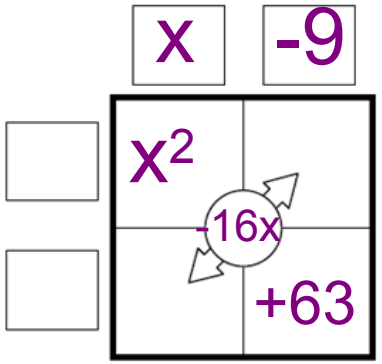
1. To find dimensions, FACTOR the expression.

30

2	15
3	10
5	6
-5	-6



2. If they give you an area, put the polynomial inside the box and the factor on the side. Figure out what's missing!



6. Same as #2! You try :)