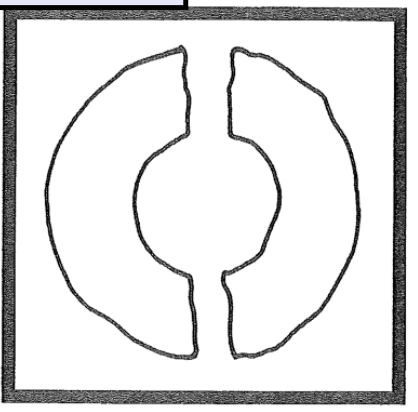
Warm Up

Using the answers you got from yesterday's sheet, solve the riddle.

Homework Questions?

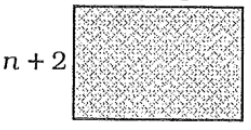
Law of the Donut

What Famous Rule of Donuts Is Illustrated by This Picture?



For the first exercise in each set, find the area of the rectangle. For all other exercises, multiply using the distributive property. Write the letter of the exercise in the box that contains the number of the answer.

S



A $(n+4)(n+9)$

E $(n-3)(n+10)$

W $(n-6)(n-5)$

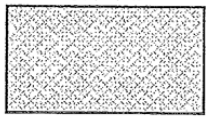
O $(2n+2)(3n+8)$

A $(7n+5)(4n-1)$

Answers

16 $n^2+7n+36$
22 $n^2+7n-30$
7 $28n^2-11n-5$
10 $n^2+7n+10$
2 $n^2-11n+30$
13 $28n^2+13n-5$
6 $n^2+13n+36$
14 $n^2+22n+30$
20 $6n^2+22n+16$

E



A $(9x-2)(4x-4)$

L $(6x+1)(3x-2)$

E $(5x-4)(2x+7)$

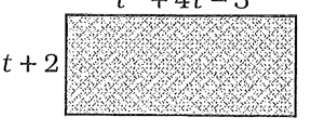
O $(2x+5y)(x+6y)$

H $(4x-y)(9x-4y)$

Answers

3 $2x^2+17xy+30y^2$
18 $36x^2-20xy+4y^2$
7 $18x^2-9x-2$
19 $36x^2-25xy+4y^2$
4 $18x^2+27x-2$
15 $10x^2+27x-28$
9 $15x^2+13x+2$
8 $10x^2-44x-28$
17 $36x^2-44x+8$

M



T $(2t-3)(3t^2+2t+5)$

K $(4t+1)(2t^2-7t+2)$

H $(3t-4)(2t^2-t-5)$

L $(8t-3)(t^2+2t+9)$

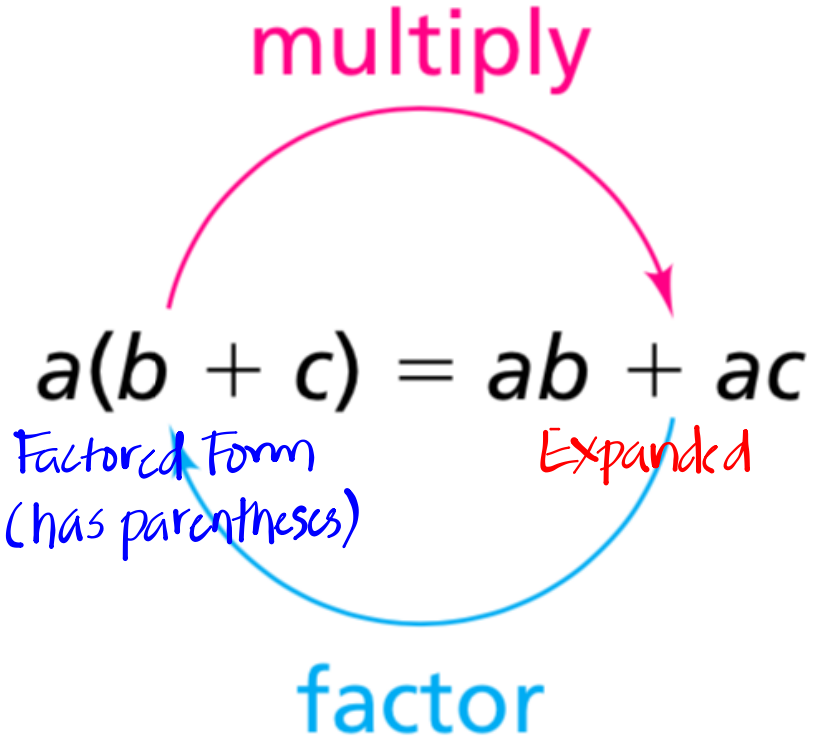
V $(5t+2)(4t^2-3t-10)$

Answers

11 $8t^3-26t^2+60t-27$
21 $8t^3+13t^2+66t-27$
1 $6t^3-5t^2+4t-15$
16 $20t^3+13t^2-50t-20$
12 t^3+6t^2+5t-6
8 $20t^3-7t^2-56t-20$
4 $6t^3-5t^2+8t+20$
14 $8t^3-26t^2+t+2$
5 $6t^3-11t^2-11t+20$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

We have been practicing taking the factored form of an equation and making it into the expanded form.



How do we create a factored form?

$4x - 10$ GCF = 2

$2(2x - 5)$

Factored Form

$x^2 + 2x$ GCF = x

$x(x + 2)$

$3x^2 + 6x$ GCF = $3x$

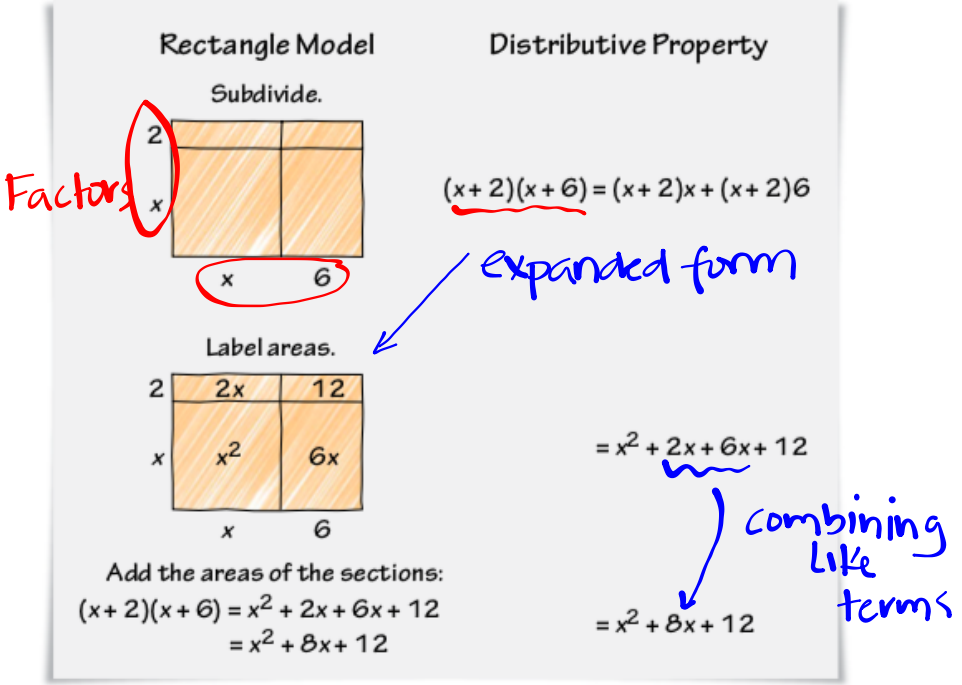
$3x(x + 2)$ ✓

Check:

$3x(x+2) = 3x^2 + 6x$

2.3 Factoring Quadratic Expressions

Ms. Porath's class summarizes two ways to rewrite a factored expression, such as $(x + 2)(x + 6)$, in expanded form.



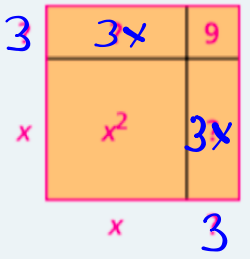
- How do these methods compare to the ones you and your classmates used?

Complete A–C and E

Problem 2.3

A **1.** Copy the diagram below. Replace each question mark with the correct length or area.

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

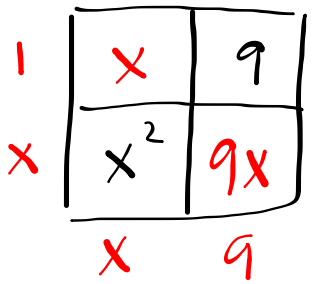


$= x^2+3x+3x+9$

$= x^2+6x+9$

Another way?

$(x+1)(x+9)$



$= x^2+x+9x+9$

$= x^2+10x+9$

2. Write two expressions for the area of the rectangle outlined in red.

$(x+1)(x+9) = x^2+10x+9$

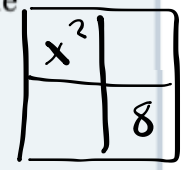
$x^2+6x+9 = (x+3)(x+3) = (x+3)^2$

2. Write two expressions for the area of the rectangle containing the red

There are 4! Find them all ☺

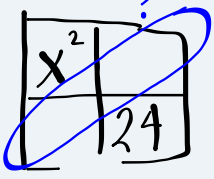
B Consider the expression $x^2 + bx + 8$.

1. Choose a value for b that gives an expression you can factor. Then, write the expression in factored form.
2. Compare your work with your classmates. Did everyone write the same expressions? Explain.



C For parts (1)–(3), find values of r and s that make the equations true.

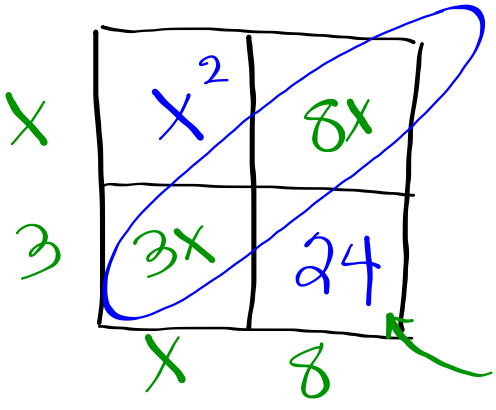
1. $x^2 + 10x + 24 = (x + 6)(x + r)$
2. $x^2 + 11x + 24 = (x + s)(x + r)$
3. $x^2 + 25x + 24 = (x + r)(x + s)$
4. Describe the strategies you used to find the values of r and s in parts (1)–(3).

2. 

= 11x

C 2.

$x^2 + 11x + 24$



= 11x

What multiples to 24 and adds to 11?

8, 3

$(x+8)(x+3)$

Problem 2.3 continued

E Use the Distributive Property to factor each expression.

1. $x^2 + 5x + 2x + 10$
2. $x^2 + 11x + 10$
3. $x^2 + 3x - 10$
4. $x^2 - 8x + 15$
5. $15 - 14x - x^2$
6. $2x^2 + 7x + 5$

Homework

Finish classwork