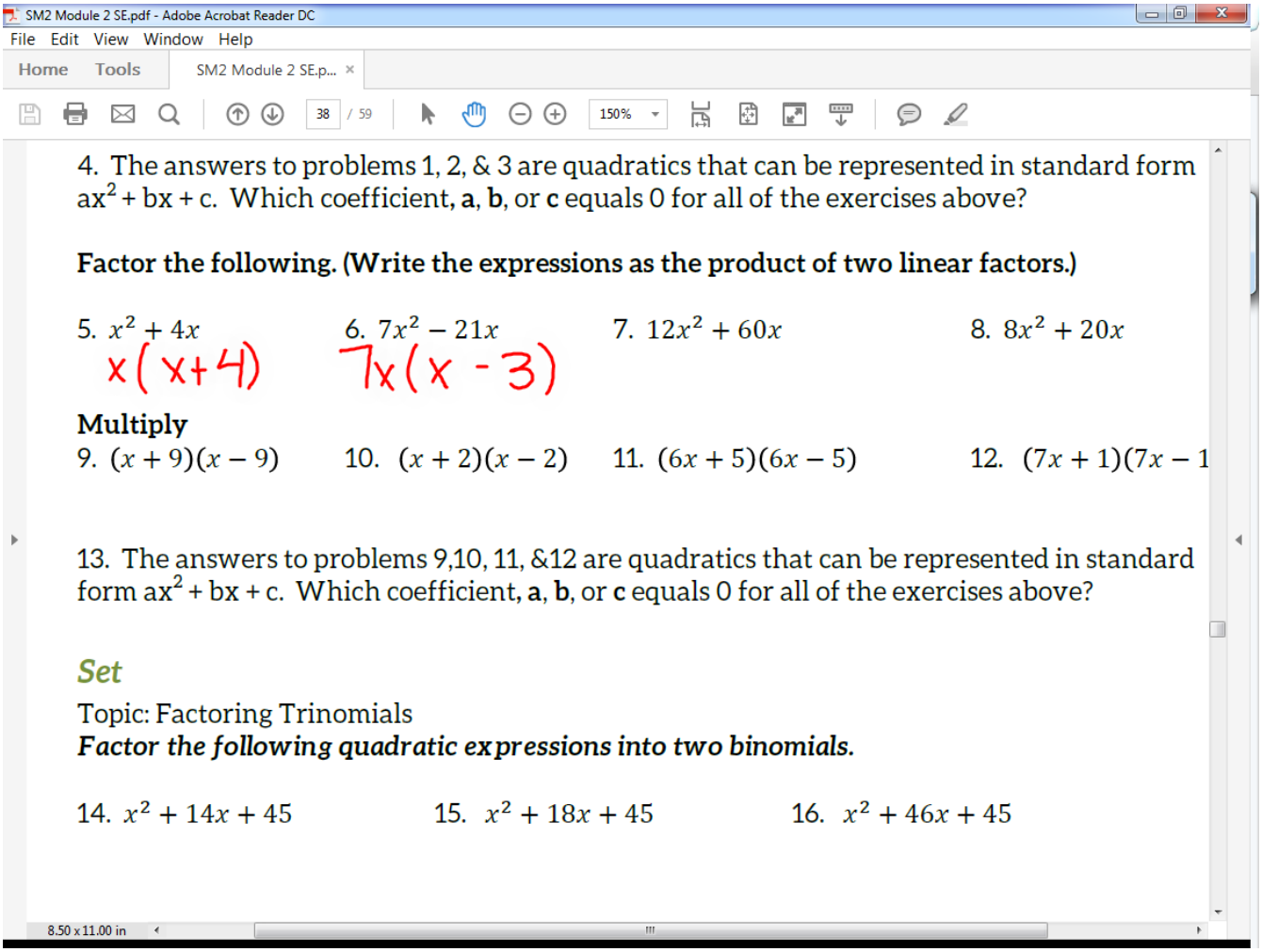
Questions on 2.6 HW? 2.5 HW is due today....no quiz.

Mar 28-9:51 AM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4. The answers to problems 1, 2, & 3 are quadratics that can be represented in standard form $ax^2 + bx + c$. Which coefficient, **a**, **b**, or **c** equals 0 for all of the exercises above?

Factor the following. (Write the expressions as the product of two linear factors.)

5. $x^2 + 4x$ $x(x+4)$

6. $7x^2 - 21x$ $7x(x-3)$

7. $12x^2 + 60x$

8. $8x^2 + 20x$

Multiply

9. $(x + 9)(x - 9)$

10. $(x + 2)(x - 2)$

11. $(6x + 5)(6x - 5)$

12. $(7x + 1)(7x - 1$

13. The answers to problems 9,10, 11, &12 are quadratics that can be represented in standard form $ax^2 + bx + c$. Which coefficient, **a**, **b**, or **c** equals 0 for all of the exercises above?

Set

Topic: Factoring Trinomials

Factor the following quadratic expressions into two binomials.

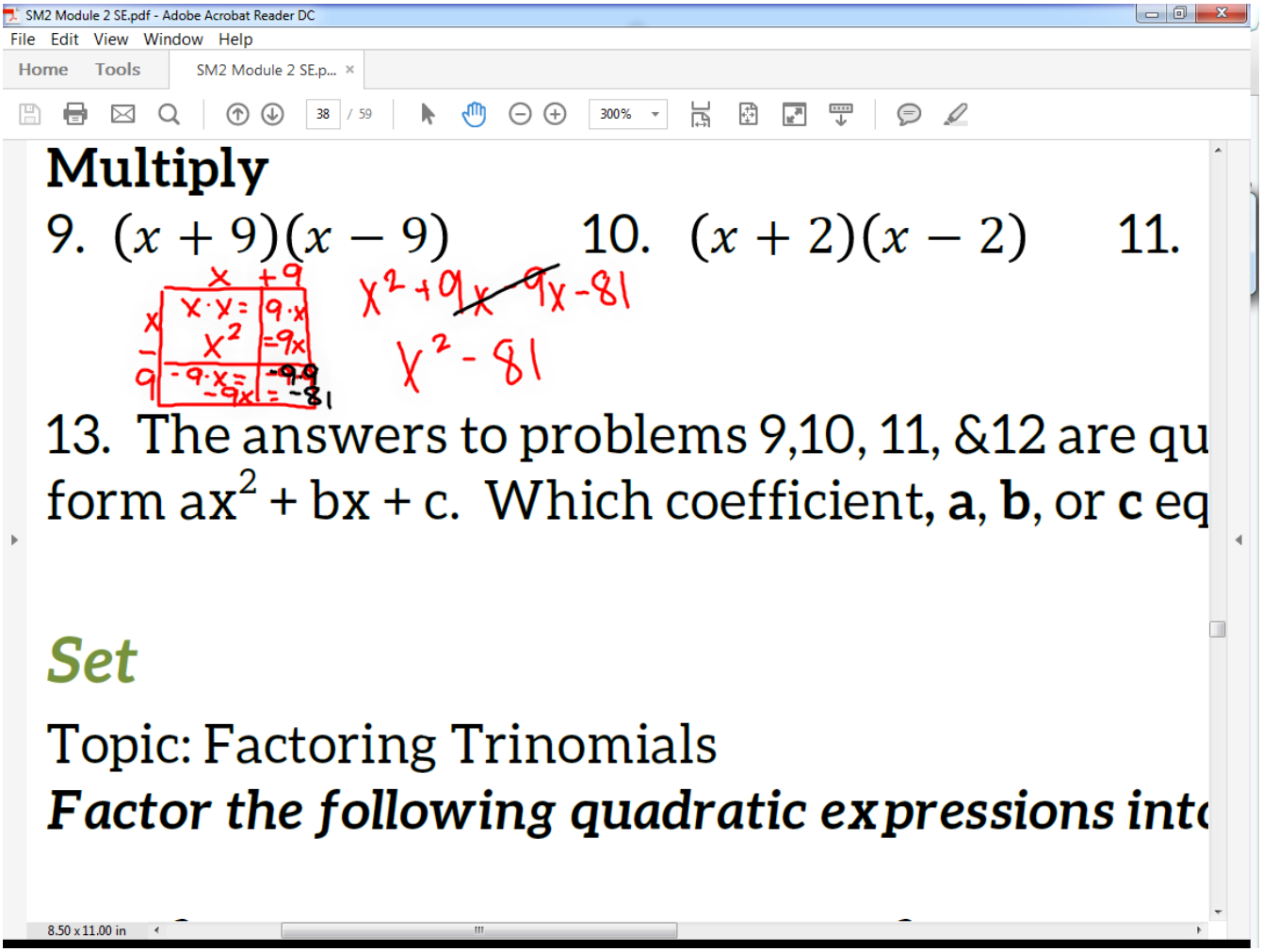
14. $x^2 + 14x + 45$

15. $x^2 + 18x + 45$

16. $x^2 + 46x + 45$

8.50 x 11.00 in

Oct 10-9:40 AM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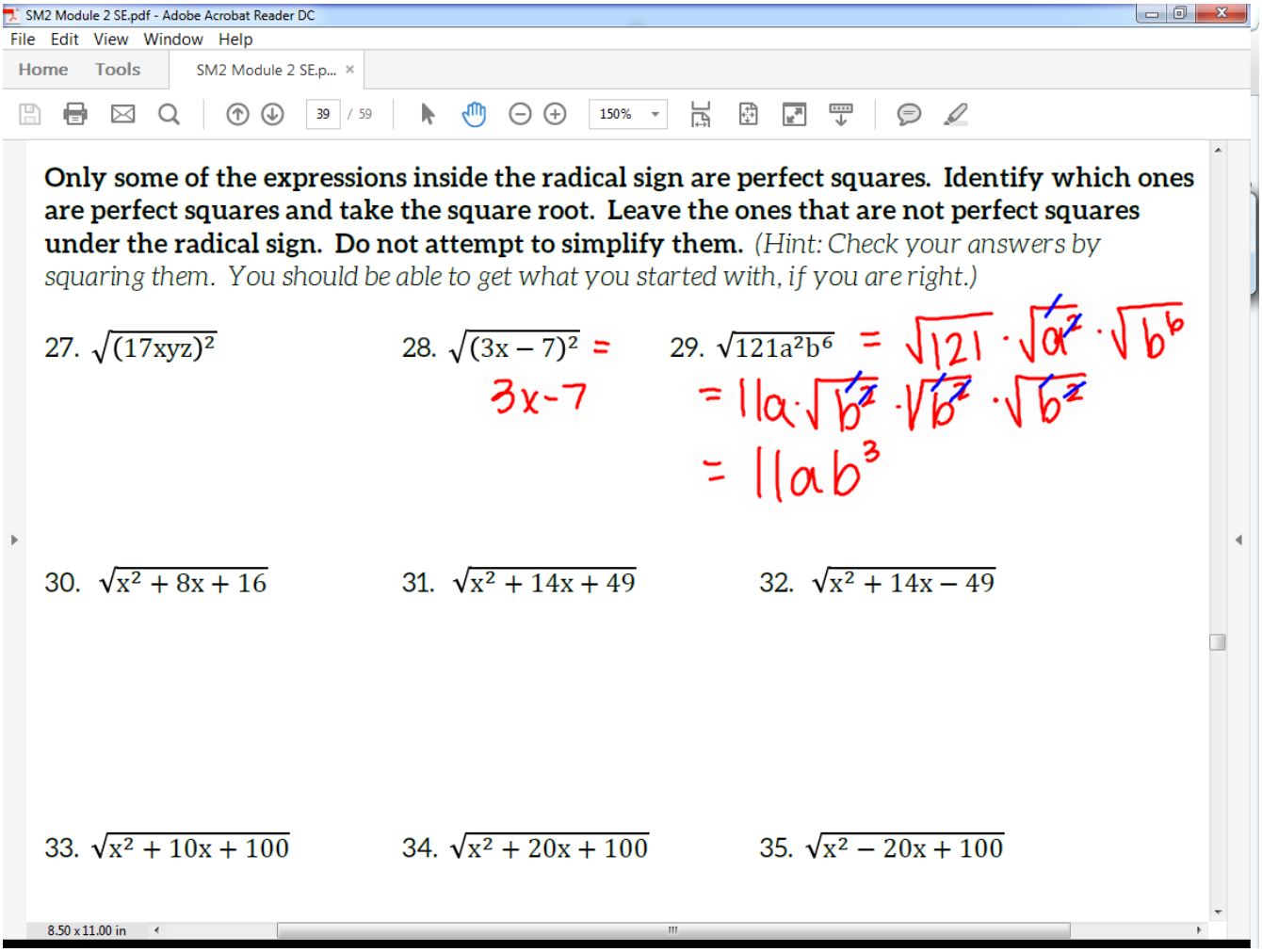
Multiply
9. $(x+9)(x-9)$
10. $(x+2)(x-2)$
11.
x +9
x
9
x^2
-9x
-9x
-81
$x^2 + 9x - 9x - 81$
$x^2 - 81$
13. The answers to problems 9,10, 11, &12 are qu
form $ax^2 + bx + c$. Which coefficient, **a**, **b**, or **c** eq
Set
Topic: Factoring Trinomials
Factor the following quadratic expressions int
8.50 x 11.00 in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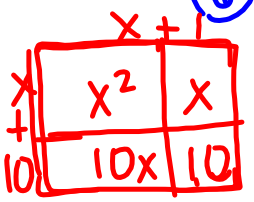
Only some of the expressions inside the radical sign are perfect squares. Identify which ones are perfect squares and take the square root. Leave the ones that are not perfect squares under the radical sign. Do not attempt to simplify them. (Hint: Check your answers by squaring them. You should be able to get what you started with, if you are right.)
27. $\sqrt{(17xyz)^2}$
28. $\sqrt{(3x-7)^2}$ = 3x-7
29. $\sqrt{121a^2b^6}$ = $\sqrt{121}\cdot\sqrt{a^2}\cdot\sqrt{b^6}$ = $11a\cdot\sqrt{b^2}\cdot\sqrt{b^2}\cdot\sqrt{b^2}$ = $11ab^3$
30. $\sqrt{x^2+8x+16}$
31. $\sqrt{x^2+14x+49}$
32. $\sqrt{x^2+14x-49}$
33. $\sqrt{x^2+10x+100}$
34. $\sqrt{x^2+20x+100}$
35. $\sqrt{x^2-20x+100}$
8.50 x 11.00 in

Some of the orders are written in an even more simplified algebraic code. Figure out what these entries mean by finding the sides of the rectangles that have this area. Use the sides of the rectangle to write equivalent expressions for the area.

10. ~~$x^2 + 9x + 10$~~

$x^2+11x+10$

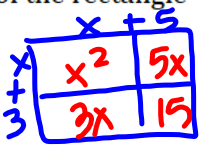
$(x+10)(x+1)$



⑥ $x^2+5x+3x+15$

$x^2+8x+15$

11. $x^2 + 7x + 10$



$(x+5)(x+2)$

12. $x^2 + 9x + 8$

$(x+8)(x+1)$

13. $x^2 + 6x + 8$

$(x+2)(x+4)$

14. $x^2 + 8x + 12$

$(x+6)(x+2)$

15. $x^2 + 7x + 12$

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

16. $x^2 + 13x + 12$

$(x+12)(x+1)$

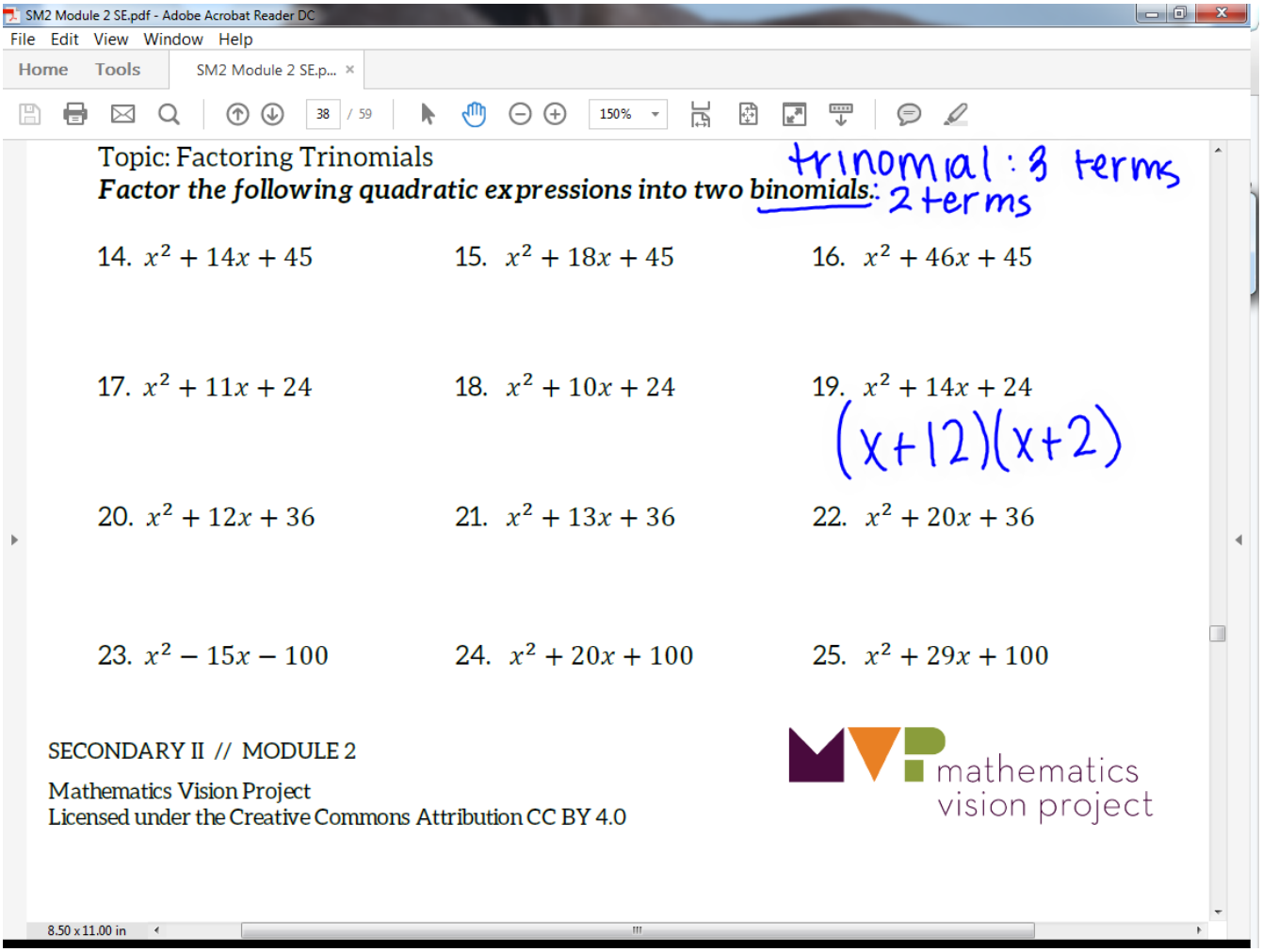
8: 1, 8
2, 4

• 12	+
1, 12	13
3, 4	7
2, 6	8

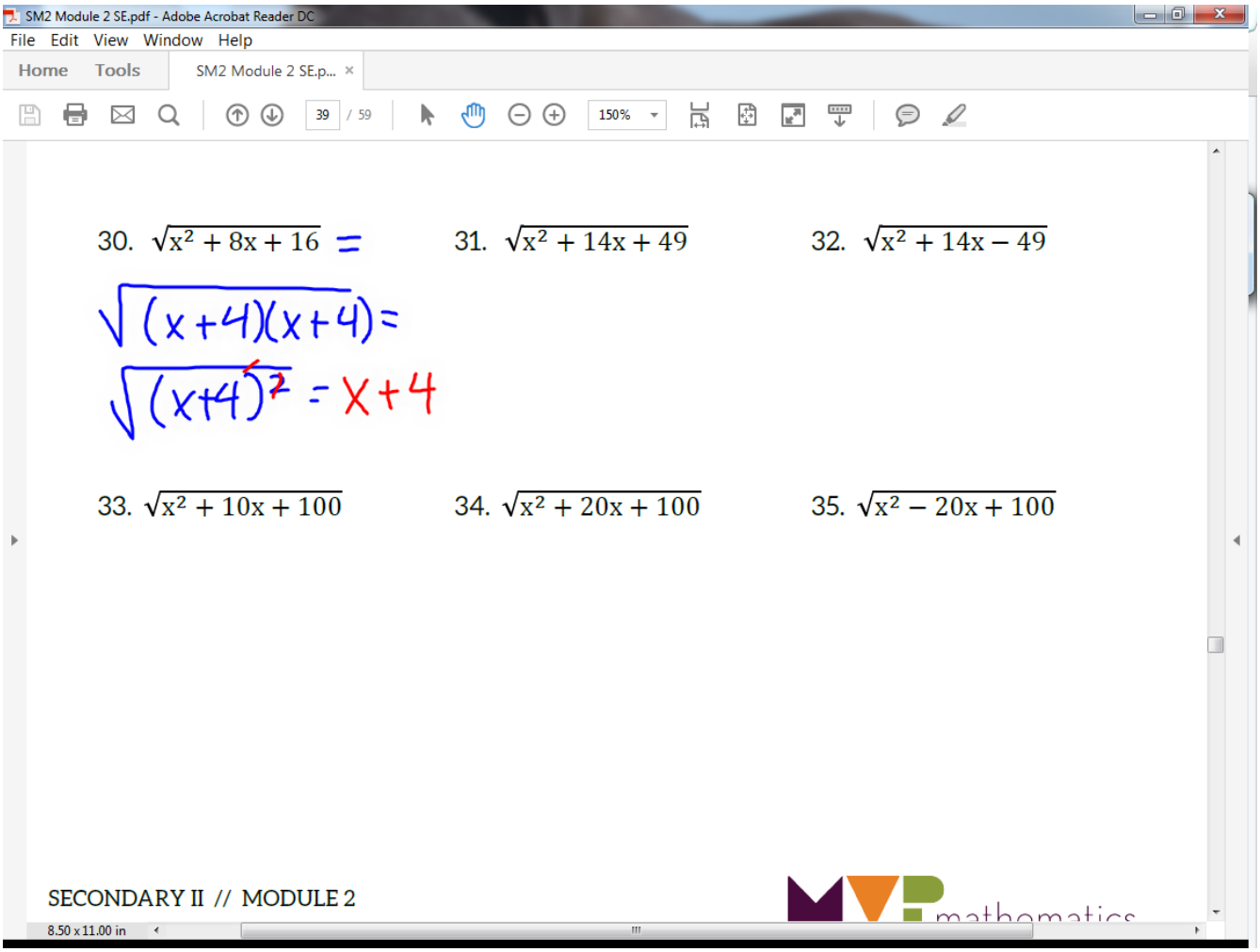
⑦ $x^2+4x+6x+24$

$x^2+10x+24$

$(x+4)(x+6)$



Oct 10-10:01 AM



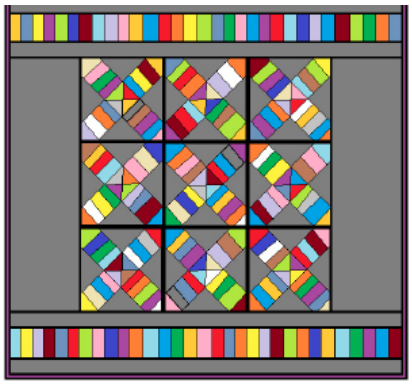
Oct 10-10:03 AM

17. What relationships or patterns do you notice when you find the sides of the rectangles for a given area of this type?

18. A customer called and asked for a rectangle with area given by: $x^2 + 7x + 9$. The customer service representative said that the shop couldn't make that rectangle. Do you agree or disagree? How can you tell if a rectangle can be constructed from a given area?

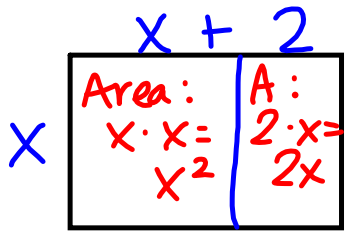
2.7 The x Factor

A Solidify Understanding Task



Now that *Optima's Quilts* is accepting orders for rectangular blocks, their business in growing by leaps and bounds. Many customer want rectangular blocks that are bigger than the standard square block on one side. Sometimes they want one side of the block to be the standard length, *x*, with the other side of the block 2 inches bigger.

1. Draw and label this block. Write two different expressions for the area of the block.

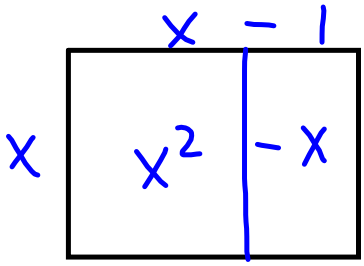


$x(x+2) =$

$x^2 + 2x$

Sometimes they want blocks with one side that is the standard length, *x*, and one side that is 1 inch less than the standard size.

2. Draw and label this block. Write two different expressions for the area of the block. Use your diagram and verify algebraically that the two expressions are equivalent.

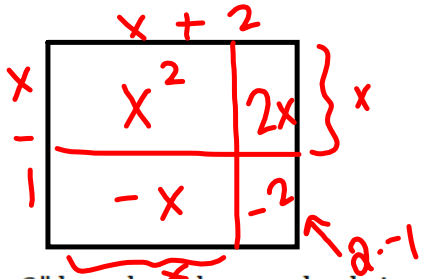


$x(x-1) =$

$x^2 - x$

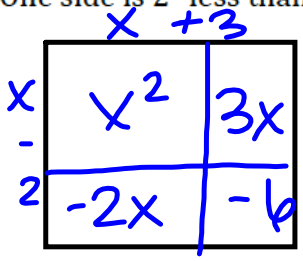
There are many other size blocks requested, with the side lengths all based on the standard length, *x*. Draw and label each of the following blocks. Use your diagrams to write two equivalent expressions for the area. Verify algebraically that the expressions are equal.

3. One side is 1" less than the standard size and the other side is 2" more than the standard size.



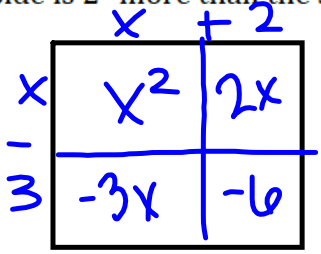
$(x-1)(x+2)=$
$x^2+2x-x-2=$
x^2+x-2

4. One side is 2" less than the standard size and the other side is 3" more than the standard size.



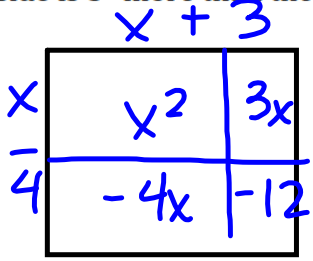
$(x-2)(x+3)=$
$x^2+3x-2x-6$
x^2+x-6

5. One side is 2" more than the standard size and the other side is 3" less than the standard size.



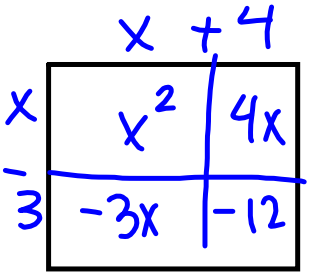
$(x+2)(x-3)=$
$x^2+2x-3x-6=$
x^2-x-6

6. One side is 3" more than the standard size and the other side is 4" less than the standard size.



$(x+3)(x-4)=$
$x^2+3x-4x-12=$
x^2-x-12

7. One side is 4" more than the standard size and the other side is 3" less than the standard size.



$(x+4)(x-3)=$
$x^2+4x-3x-12=$
x^2+x-12

8. An expression that has 3 terms in the form: $ax^2 + bx + c$ is called a trinomial. Look back at the trinomials you wrote in questions 3-7. How can you tell if the middle term (bx) is going to be positive or negative?

b will be positive when the two factors of c have a larger positive number (ex: $(x+3)(x-2)$)

b will be negative when the two factors of c have a larger negative number (ex: $(x-3)(x+2)$)

9. One customer had an unusual request. She wanted a block that is extended 2 inches on one side and decreased by 2 inches on the other. One of the employees thinks that this rectangle will have the same area as the original square since one side was decreased by the same amount as the other side was increased. What do you think? Use a diagram to find two expressions for the area of this block.

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

10. The result of the unusual request made the employee curious. Is there a pattern or a way to predict the two expressions for area when one side is increased and the other side is decreased by the same number? Try modeling these two problems, look at your answer to #8, and see if you can find a pattern in the result.

a. $(x+1)(x-1)$

b. $(x+3)(x-3)$

11. What pattern did you notice? What is the result of $(x+a)(x-a)$?

12. Some customers want both sides of the block reduced. Draw the diagram for the following blocks and find a trinomial expression for the area of each block. Use algebra to verify the trinomial expression that you found from the diagram.

a. $(x-2)(x-3)$

b. $(x+1)(x-4)$

13. Look back over all the equivalent expressions that you have written so far, and explain how to tell if the third term in the trinomial expression $ax^2 + bx + c$ will be positive or negative.

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14. Optima's quilt shop has received a number of orders that are given as rectangular areas using a trinomial expression. Find the equivalent expression that shows the lengths of the two sides of the rectangles.

a. $x^2 + 9x + 18$

b. $x^2 + 3x - 18$

c. $x^2 - 3x - 18$

d. $x^2 - 9x + 18$

e. $x^2 - 5x + 4$

f. $x^2 - 3x + 4$

g. $x^2 + 2x - 15$

14. Write an explanation of how to factor a trinomial in the form: $x^2 + bx + c$.

Mar 28-9:47 AM

Homework

Finish 2.7 "Ready, Set, Go"

Mar 28-9:36 AM