

1.2 I Rule! **Begin 1.2 Lesson**

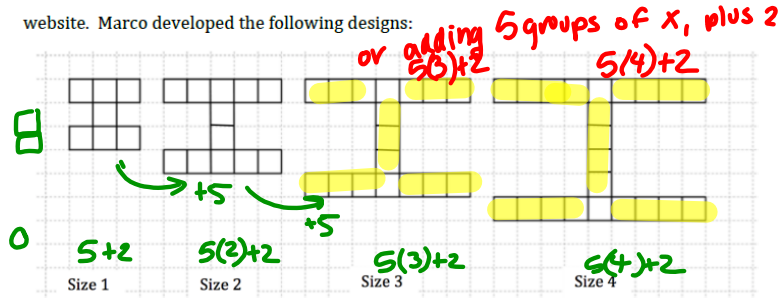
A Solidify Understanding Task



Marco has started a new blog about sports at Imagination High School (mascot: the fighting unicorns) that he has decided to call "I Site". He created a logo for the web site that looks like this:



He is working on creating the logo in various sizes to be placed on different pages on the website. Marco developed the following designs:



- How many squares will be needed to create the size 100 logo?

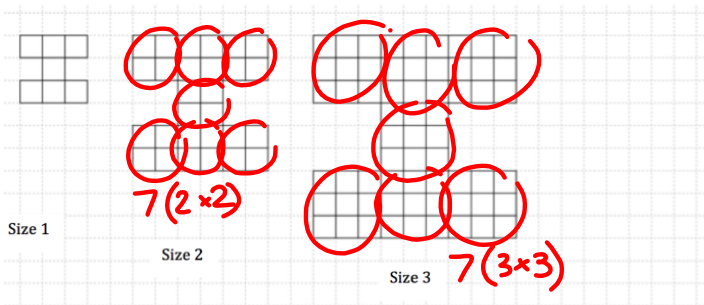
$5(100) + 2 = 502$

- Develop a mathematical model for the number of squares in the logo for size n .

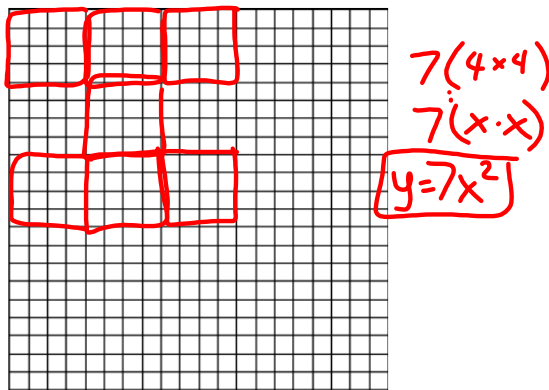
$y = 5(x) + 2$

Sep 6-7:15 AM

Marco decides to experiment with making his logo "blockier" so that it looks stronger. Here's what he came up with:



- Assuming that Marco continues with the pattern as it has begun, draw the next figure, size 4, and find the number of blocks in the figure.



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4. Develop a mathematical model for the number of blocks in a logo of size n .

$$7x^2$$

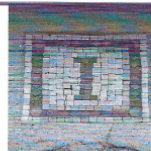
5. Compare the models that you developed for the first set of logos to the second set of logos. In what ways are they similar? In what ways are they different?

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Name:

Quadratic Functions 1.2

Ready, Set, Go!



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Ready

Topic: Adding and multiplying binomials

Simplify the following expressions

1a. $(2x + 7) + (5x + 3)$

$7x + 10$

2a. $(6x - 1) + (x - 10)$

3a. $(8x + 3) + (3x - 4)$

4a. $(-5x + 2) + (7x - 13)$

5a. $(12x + 3) + (-4x + 3)$

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

7. Compare your answers in 1 - 5 part a to your answers in #1 - #5 part b respectively. Look for a pattern in the answers. How are they different?

8. The answer to #6 is a different "shape" than the other part b answers, even though you were still multiplying. Explain how it is different from the other products. Try to explain why it is different. Think of 2 more examples of multiplication of two binomials that would do the same thing as #6.

9. Try adding the two binomials in #6. $(x + 5) + (x - 5) =$ _____ Is this answer a different "shape" than the other part a answers? Explain.

b. $(2x + 7)(5x + 3)$

$10x^2 + 6x + 35x + 21$

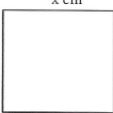
b. $(6x - 1)(x - 10)$

$10x^2 + 41x + 21$


Sep 14-3:47 PM

Set
Topic: Comparing area and perimeter


Calculate the *perimeter* and the *area* of the figures below. (Your answers will contain a variable.)

10.  x cm


a. Perimeter: _____
b. Area: _____

11.  (x+1) in


a. Perimeter: $4x+4$
b. Area: $(x+1)(x+1)$
 x^2+2x+1

12.  (a+5) ft (b+3) ft


a. Perimeter: _____
b. Area: _____

13.  b mi a mi

a. Perimeter: $2a+2b$
b. Area: ab

14.  (x+3) m (x-2) m

a. Perimeter: _____
b. Area: _____

15.  (x+4) in (x+1)

a. Perimeter: _____
b. Area: _____

16. Compare the perimeter to the area in each of problems (10-15).
a. What do the perimeters and areas have in common?
b. In what way are the numbers and units in the perimeters and areas different?

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GO
Topic: Greatest Common Factor

Find the GCF for the given terms.

16. $15abc^2$ and $25a^2bc$

$3 \cdot 5 \cdot a \cdot b \cdot c \cdot c$
 $5 \cdot 5 \cdot a^2 \cdot a \cdot b \cdot c$
GCF: $5abc$

17. $12x^2y$ and $32x^2y$

$2 \cdot 2 \cdot 3 \cdot x \cdot x \cdot y$
 $2 \cdot 2 \cdot 2 \cdot 2 \cdot x \cdot x \cdot y$
GCF: $4x^2y$

18. $17pqr$ and $51pqr^3$

$17 \cdot p \cdot q \cdot r$
 $3 \cdot 17 \cdot p \cdot q \cdot r \cdot r \cdot r$
GCF: $17pqr$

19. $7x^2$ and $21x$

$7 \cdot x \cdot x$
 $3 \cdot 7 \cdot x$
GCF: $7x$

20. $6x^2$, $18x$, and 12

$2 \cdot 3 \cdot x \cdot x$
 $2 \cdot 3 \cdot 3 \cdot x$
 $2 \cdot 2 \cdot 3$
GCF: 6

21. $4x^2$ and $9x$

$2 \cdot 2 \cdot x \cdot x$
 $3 \cdot 3 \cdot x$
GCF: x

22. $11x^2y^2$, $33x^2y$, and $3xy^2$

$11 \cdot x \cdot x \cdot y \cdot y$
 $3 \cdot 3 \cdot x \cdot x \cdot y$
 $3 \cdot x \cdot y \cdot y$
GCF: xy^2

23. $16a^2b$, $24ab$, and $16b$

$2 \cdot 2 \cdot 2 \cdot 2 \cdot a \cdot a \cdot b$
 $2 \cdot 2 \cdot 3 \cdot a \cdot b$
 $2 \cdot 2 \cdot b$
GCF: $4b$

24. $49s^2t^2$ and $36s^2t^2$

$7 \cdot 7 \cdot s \cdot s \cdot t \cdot t$
 $6 \cdot 6 \cdot s \cdot s \cdot t \cdot t$
GCF: $4s^2t^2$

Aug 28-8:59 AM