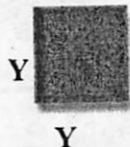
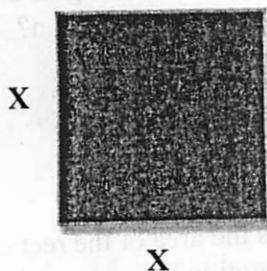


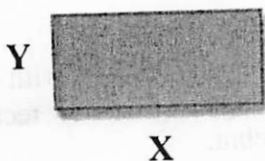
Rectangular Tiles

Nicolas is making rectangular designs out of different tiles. He uses two different sized squares that will never line up exactly, no matter how many tiles are used. Nicolas labels the sides of the big square **X** and the sides of the small square **Y**.



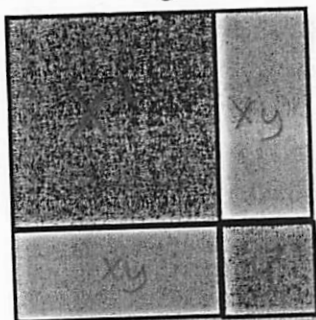
1. What is the area of the large square? X^2

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is **X**, the same as a side of the large square. The width of the rectangle is **Y**, the same as a side of the small square.



2. What is the area of the rectangle? yx

Nicolas arranges the tiles in a rectangular configuration.



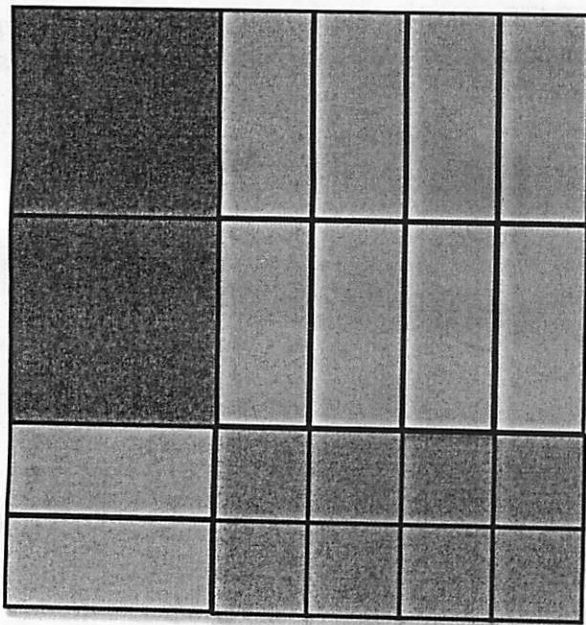
3. What are the lengths of sides of the rectangular configuration?

$(x+y)$ by $(x+y)$

4. What is the area of the rectangular configuration? Explain

The area is $(x+y)^2$, because each of the sides are $(x+y)$, and the area of a square is the side length, squared.

Nicolas creates a different rectangular configuration out of the three tiles.



5. What are the side lengths of the rectangular configuration?

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

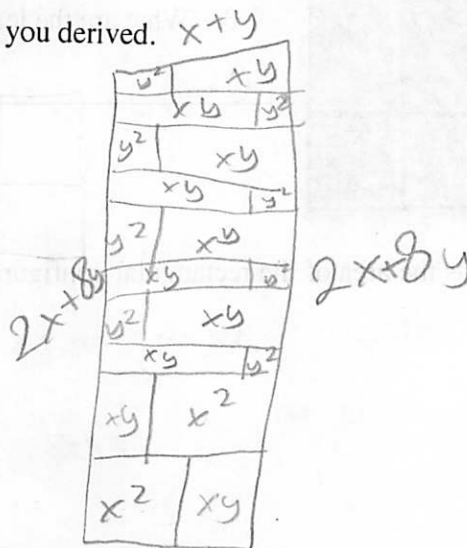
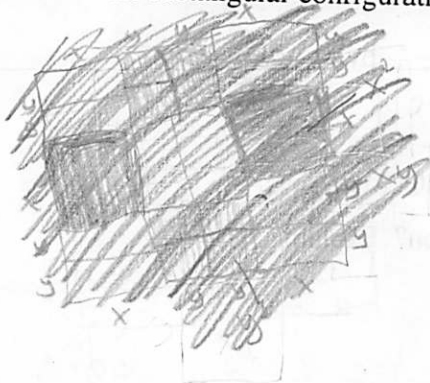
6. What is the area of the rectangular configuration?

$$2x^2 + 8y^2 + 10xy$$

7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

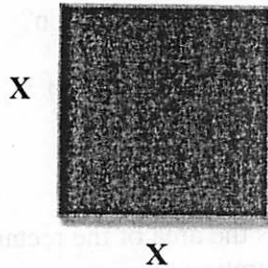
The side lengths are $(2x+8y)$ by $(2x+y)$.

8. Draw the rectangular configuration you derived.



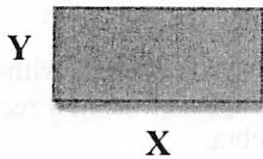
Rectangular Tiles

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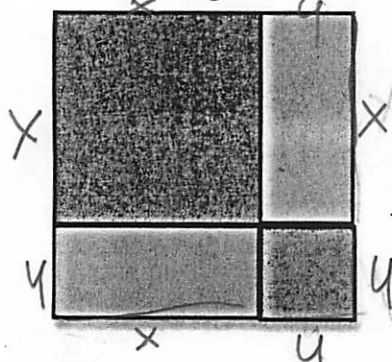
1. What is the area of the large square? $A = X^2$

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is **X**, the same as a side of the large square. The width of the rectangle is **Y**, the same as a side of the small square.



2. What is the area of the rectangle? $A = XY$

Nicolas arranges the tiles in a rectangular configuration.



$*X * Y = A, X + Y = S$

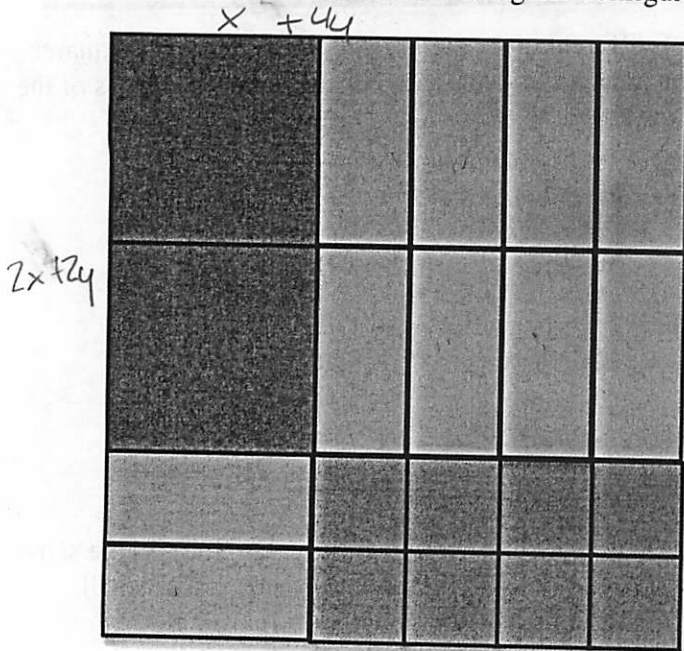
3. What are the lengths of sides of the rectangular configuration?

$X + Y$ by $X + Y$

4. What is the area of the rectangular configuration? Explain

$2xy + x^2 + y^2$, you add up the area of each individual rectangle to get the total area.

Nicolas creates a different rectangular configuration out of the three ^{types of} tiles.



5. What are the side lengths of the rectangular configuration?

$(2x+2y$ by $(x+4y)$
or

$2(x+y)$ by $x+4y$

6. What is the area of the rectangular configuration?

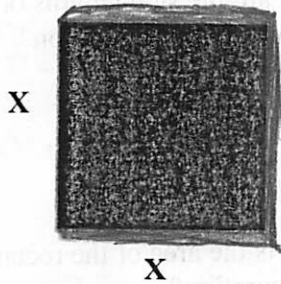
$10xy + 8y^2 + 2x^2$

7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

8. Draw the rectangular configuration you derived.

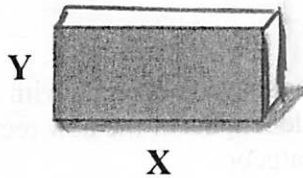
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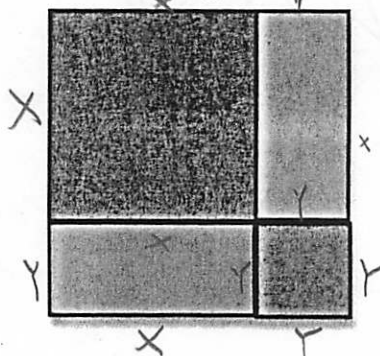
1. What is the area of the large square? X^2

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is **X**, the same as a side of the large square. The width of the rectangle is **Y**, the same as a side of the small square.



2. What is the area of the rectangle? Xy

Nicolas arranges the tiles in a rectangular configuration.



3. What are the lengths of sides of the rectangular configuration?

$X + Y$ by $X + Y$

4. What is the area of the rectangular configuration? Explain

Handwritten work for question 4:

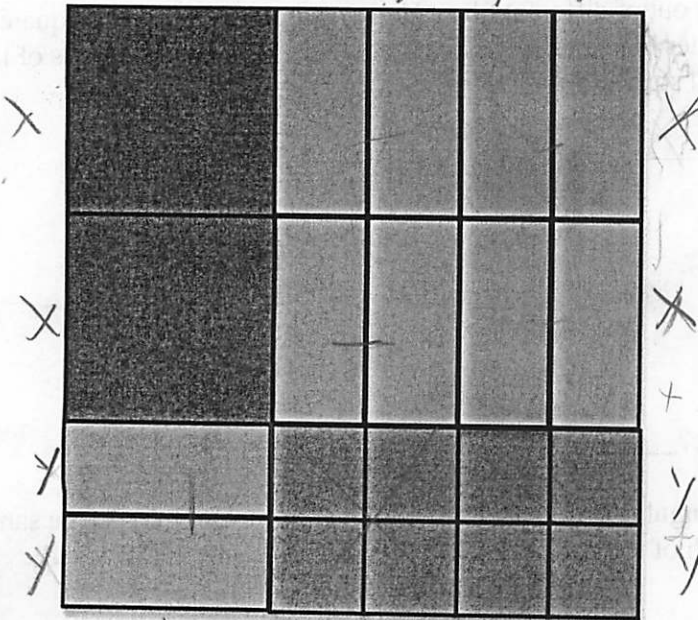
$xy + xy + y^2 + x^2 + (2xy)$

xy $y \begin{matrix} x \\ \square \\ xy \end{matrix}$

$(x+y)(x+y)$

$\begin{matrix} 16 & + & - \\ 12 & 0 & 40 \\ \hline & & \end{matrix}$

Nicolas creates a different rectangular configuration out of the three tiles.



5. What are the side lengths of the rectangular configuration?

$x + 4y$
 $2x + 2y$
 $x + 4y$
 $2x + 2y$

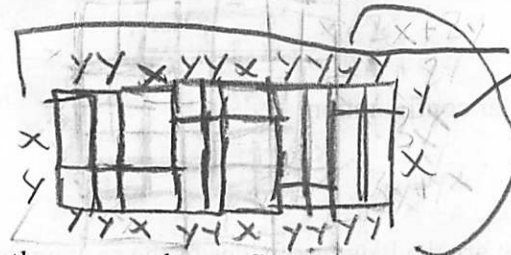
$x + y + y + y + y$
 $2(x + y)$
 $x + y + y + y + y$
 $2(x + y)$

6. What is the area of the rectangular configuration?

$2x + 2y \times x + 4y$

7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

$x + 4y$
 $2x + 2y$

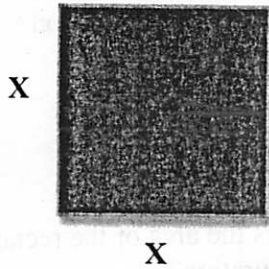


$8y + 2x \times x + y$

8. Draw the rectangular configuration you derived.

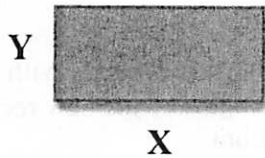
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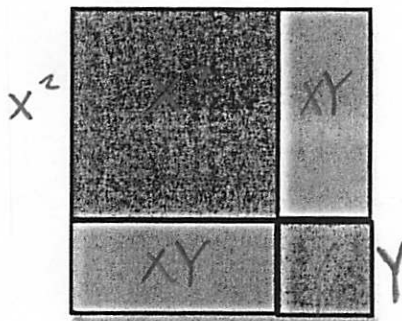
1. What is the area of the large square? X^2

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is **X**, the same as a side of the large square. The width of the rectangle is **Y**, the same as a side of the small square.



2. What is the area of the rectangle? $Y \cdot X$

Nicolas arranges the tiles in a rectangular configuration.



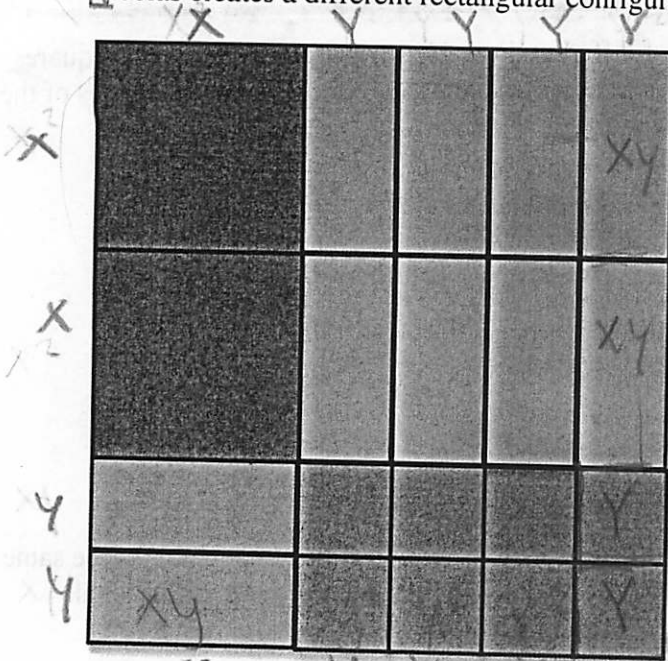
3. What are the lengths of sides of the rectangular configuration?

$Y+X$ by $X+Y$

4. What is the area of the rectangular configuration? Explain

The area of the rectangular configuration is $X^2 + 2xy + Y^2$. This is the rectangular configuration because if you add up all the shapes in the big rectangle that's what you get.

Nicolas creates a different rectangular configuration out of the three tiles.



5. What are the side lengths of the rectangular configuration?

$$2x + 2y$$

$$4y + x$$

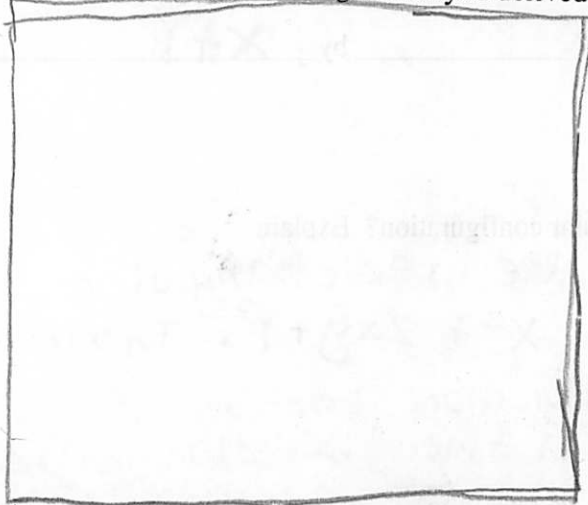
6. What is the area of the rectangular configuration?

$$10xy + 8y^2 + 2x^2$$

7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

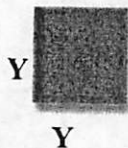
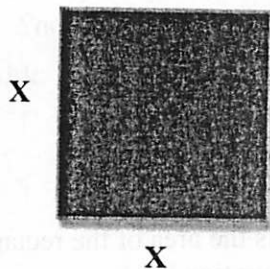
I used -

8. Draw the rectangular configuration you derived.



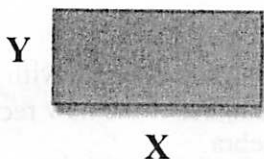
Rectangular Tiles

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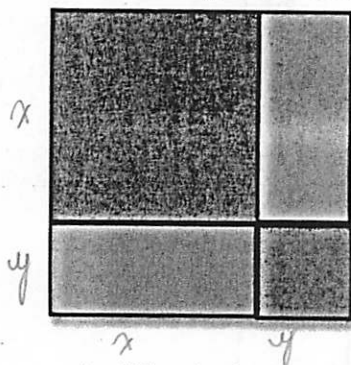
1. What is the area of the large square? The area of the square is x^2 .

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is **X**, the same as a side of the large square. The width of the rectangle is **Y**, the same as a side of the small square.



2. What is the area of the rectangle? The area would be $x \cdot y$.

Nicolas arranges the tiles in a rectangular configuration.



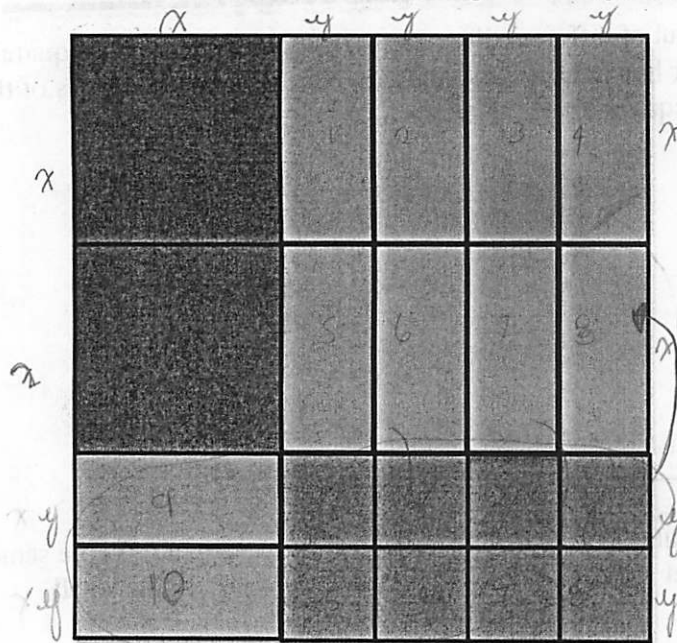
3. What are the lengths of sides of the rectangular configuration?

one side is $x+y$ by xy

4. What is the area of the rectangular configuration? Explain

The area of this rectangular configuration would equal to $(x+y)(xy)$.

Nicolas creates a different rectangular configuration out of the three tiles.



5. What are the side lengths of the rectangular configuration?

The length of the sides are $x+4y$ and $2x+2y$.

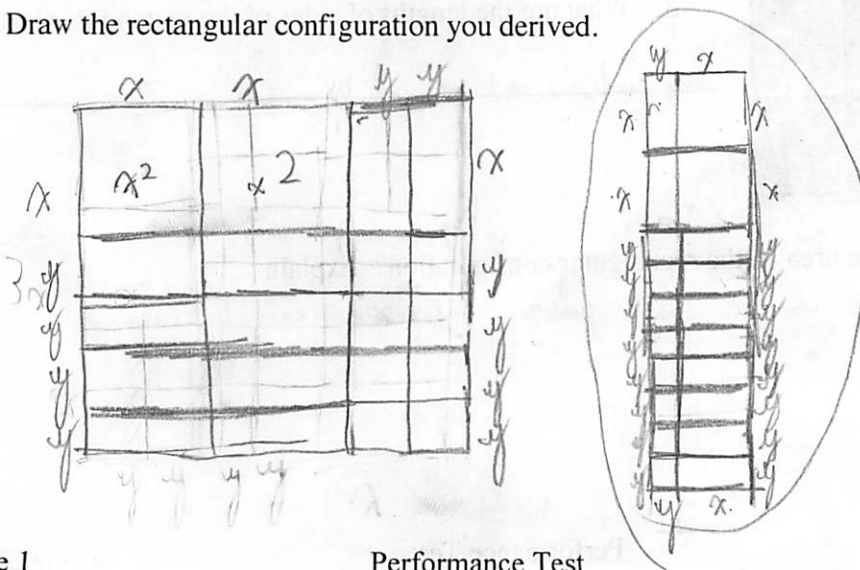
6. What is the area of the rectangular configuration?

The area of this shape would be $2x^2 + 10xy + 8y^2$.

7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

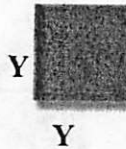
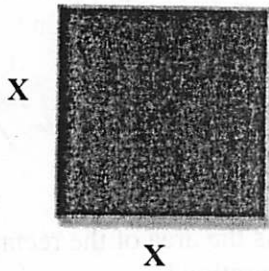
So if Nicolas were to arrange the shape the side lengths would come out to $2x+2y$ by $x+4y$ x^2+4y^2 by $2x+8y$

8. Draw the rectangular configuration you derived.



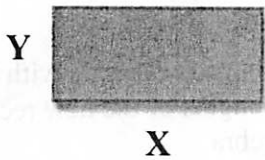
Rectangular Tiles

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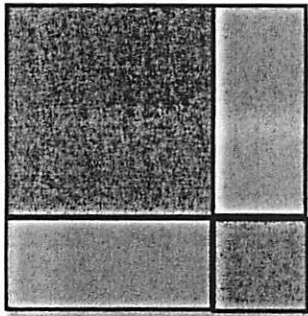
1. What is the area of the large square? X^2

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is **X**, the same as a side of the large square. The width of the rectangle is **Y**, the same as a side of the small square.



2. What is the area of the rectangle? ~~$X \times Y$~~

Nicolas arranges the tiles in a rectangular configuration.



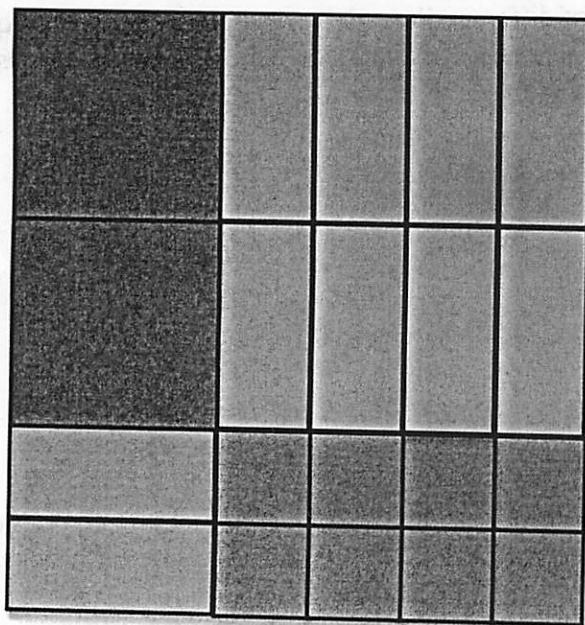
3. What are the lengths of sides of the rectangular configuration?

$X+Y$ by $X+Y$

4. What is the area of the rectangular configuration? Explain

The area of the rectangular configuration is $(Y+X)^2$

Nicolas creates a different rectangular configuration out of the three tiles.



5. What are the side lengths of the rectangular configuration?

$$y + 4x \text{ by } 2x + 2y$$

6. What is the area of the rectangular configuration?

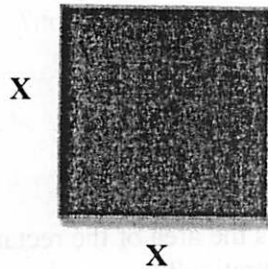
$$(10 \times y) + (2 \times 2 + 8y^2)$$

7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

8. Draw the rectangular configuration you derived.

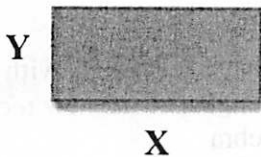
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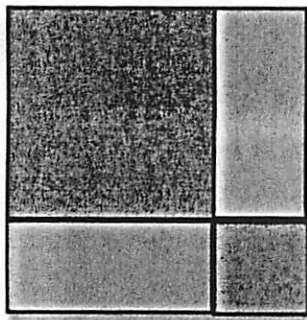
1. What is the area of the large square? X^2

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is **X**, the same as a side of the large square. The width of the rectangle is **Y**, the same as a side of the small square.



2. What is the area of the rectangle? xy

Nicolas arranges the tiles in a rectangular configuration.



3. What are the lengths of sides of the rectangular configuration?

$x+y$ by $x+y$

4. What is the area of the rectangular configuration? Explain

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

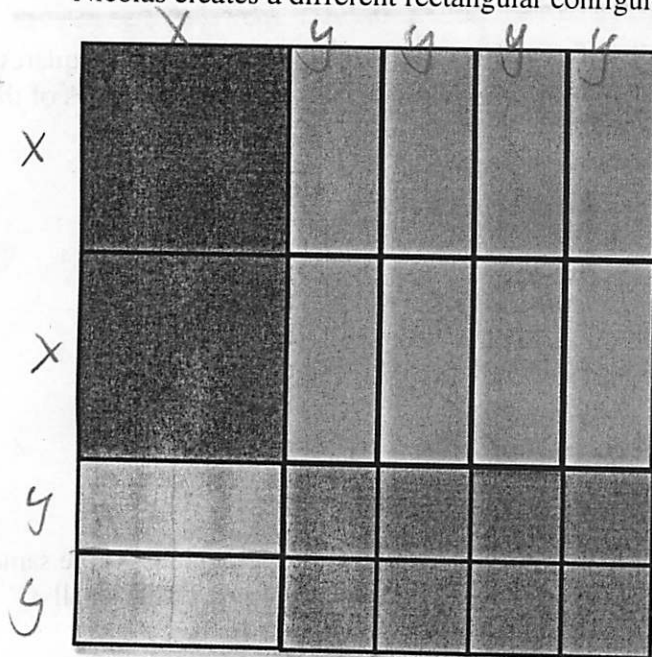
Course 1

Performance Test

Spring 2012

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Nicolas creates a different rectangular configuration out of the three tiles.



5. What are the side lengths of the rectangular configuration?

$2x + 2y$ by $x + 4y$

6. What is the area of the rectangular configuration?

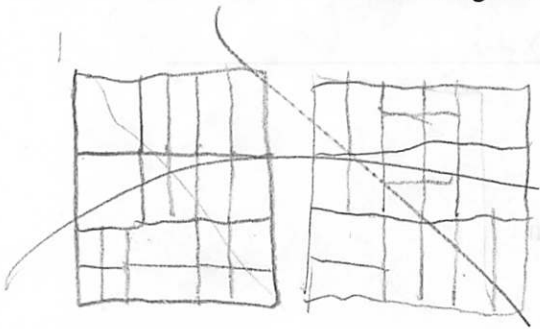
$y(2x + 2y)(x + 4y)$

$10xy + 2x^2 + 8y^2$

7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

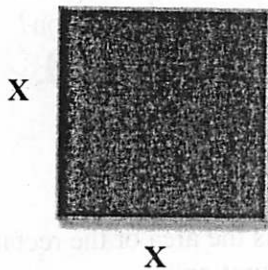
$(2x + 2y)(4y + x)$

8. Draw the rectangular configuration you derived.



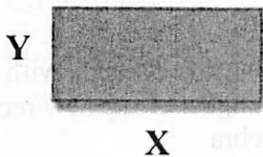
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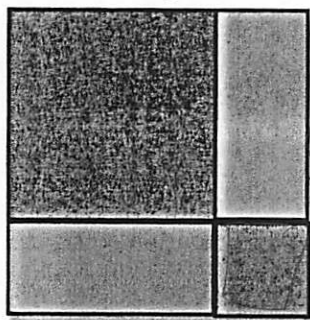
1. What is the area of the large square? X^2

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is **X**, the same as a side of the large square. The width of the rectangle is **Y**, the same as a side of the small square.



2. What is the area of the rectangle? $Y \cdot X$

Nicolas arranges the tiles in a rectangular configuration.

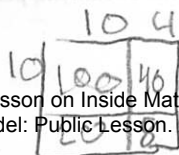


3. What are the lengths of sides of the rectangular configuration?

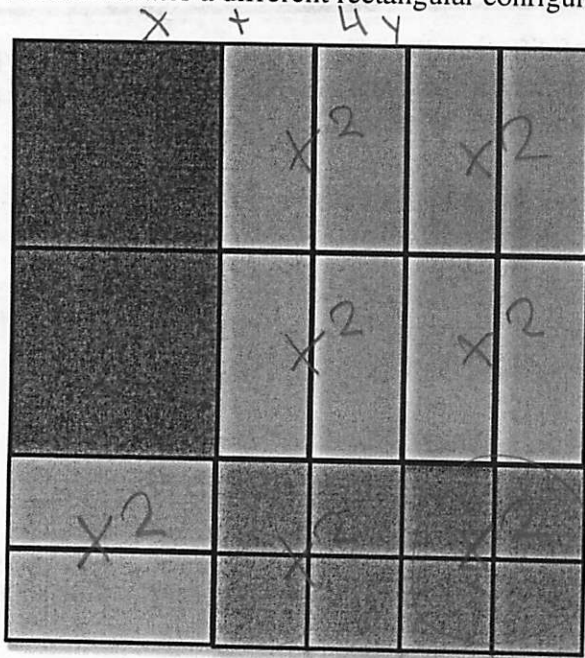
$X + Y$ by $X + Y$

4. What is the area of the rectangular configuration? Explain

The area would be XY^2 because the lengths are $X + Y$ so you would multiply XY by itself. This would give you the area of the square.



Nicolas creates a different rectangular configuration out of the three tiles.



5. What are the side lengths of the rectangular configuration?

$$2x + 4y \text{ by } 2x + 2y$$

6. What is the area of the rectangular configuration?

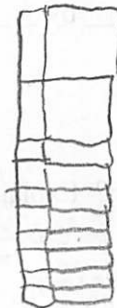
~~$(x+4y)(2x+2y)$~~ ~~$3x+6y$~~

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

$$2x^2 + 10xy + 8y^2$$

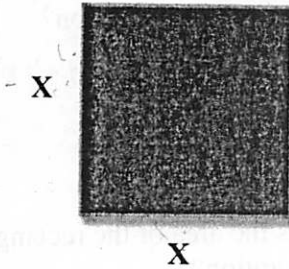
7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

8. Draw the rectangular configuration you derived.



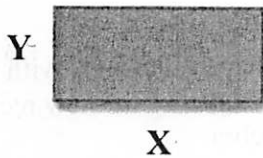
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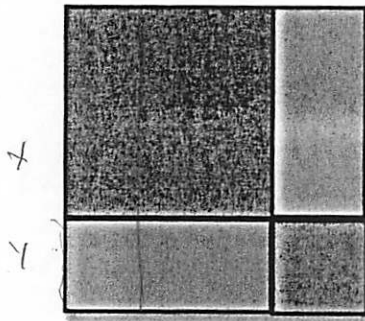
1. What is the area of the large square? X^2

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is X , the same as a side of the large square. The width of the rectangle is Y , the same as a side of the small square.



2. What is the area of the rectangle? $Y \cdot X$

Nicolas arranges the tiles in a rectangular configuration.



3. What are the lengths of sides of the rectangular configuration?

$X+Y$ by $X+Y$

4. What is the area of the rectangular configuration? Explain

The Area of the rectangular configuration is $X+Y = X+Y$ because when you find the area X and Y you will add them. After you add them then you will multiple the two side lengths

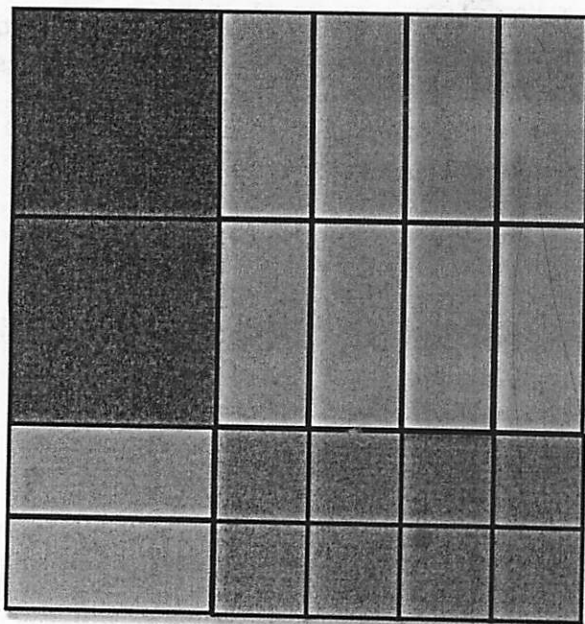
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Nicolas creates a different rectangular configuration out of the three tiles.



5. What are the side lengths of the rectangular configuration?

$$(x+x+y+y) \cdot (y+y+y+y+x)$$

$$x+x+y+y$$

6. What is the area of the rectangular configuration?

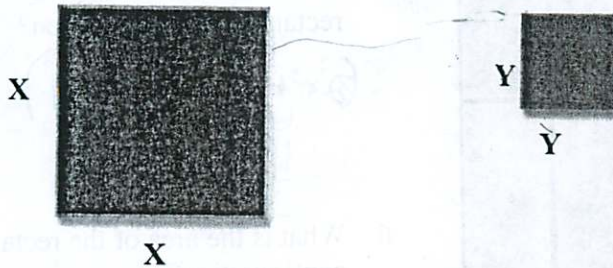
$$x+4y \text{ by } 2x+2y$$

7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

8. Draw the rectangular configuration you derived.

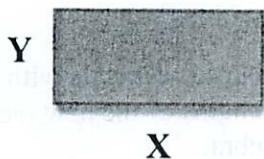
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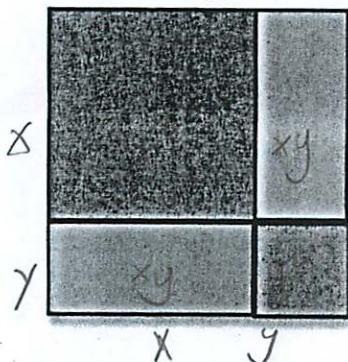
1. What is the area of the large square? $X \cdot X = X^2$

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is X , the same as a side of the large square. The width of the rectangle is Y , the same as a side of the small square.



2. What is the area of the rectangle? $Y \cdot X = xy$

Nicolas arranges the tiles in a rectangular configuration.



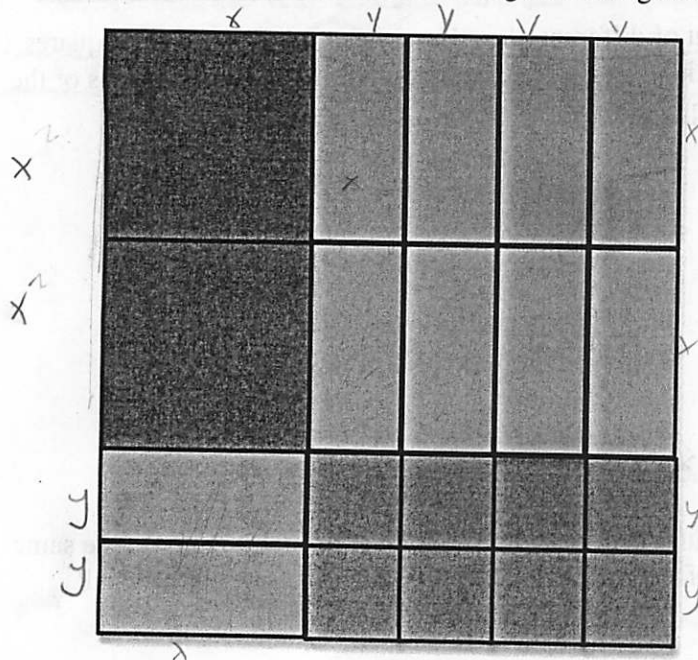
3. What are the lengths of sides of the rectangular configuration?

$(X+Y)$ by $(X+Y)$

4. What is the area of the rectangular configuration? Explain

$(X+Y) \cdot (X+Y)$ because since the side lengths equal $X+Y$ you multiply $(X+Y) \cdot (X+Y)$

Nicolas creates a different rectangular configuration out of the three tiles.



5. What are the side lengths of the rectangular configuration?

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

$$(x+4y)$$

6. What is the area of the rectangular configuration?

$$2x^2 + 10xy + 8y^2$$

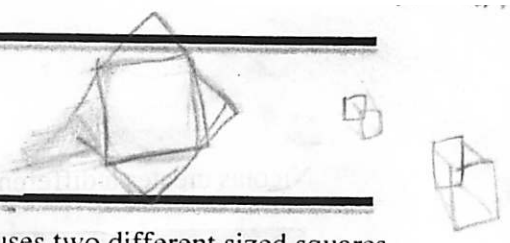
7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

8. Draw the rectangular configuration you derived.

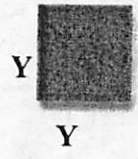
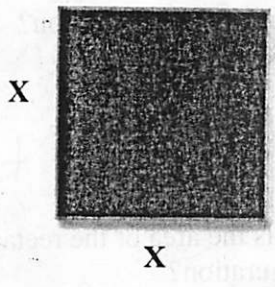
Leila's
my PAIN
Buddy

silicon valley math

Rectangular Tiles



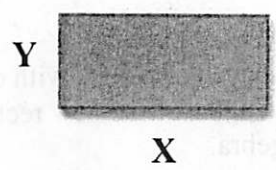
Nicolas is making rectangular designs out of different tiles. He uses two different sized squares that will never line up exactly, no matter how many tiles are used. Nicolas labels the sides of the big square **X** and the sides of the small square **Y**.



What
size is
it?

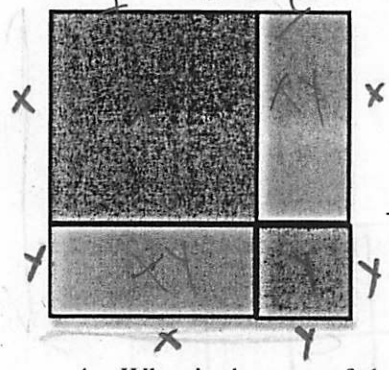
1. What is the area of the large square? X^2

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is **X**, the same as a side of the large square. The width of the rectangle is **Y**, the same as a side of the small square.



2. What is the area of the rectangle? $X \cdot Y$

Nicolas arranges the tiles in a rectangular configuration.



3. What are the lengths of sides of the rectangular configuration?

$X + Y$ by $X + Y$

4. What is the area of the rectangular configuration? Explain

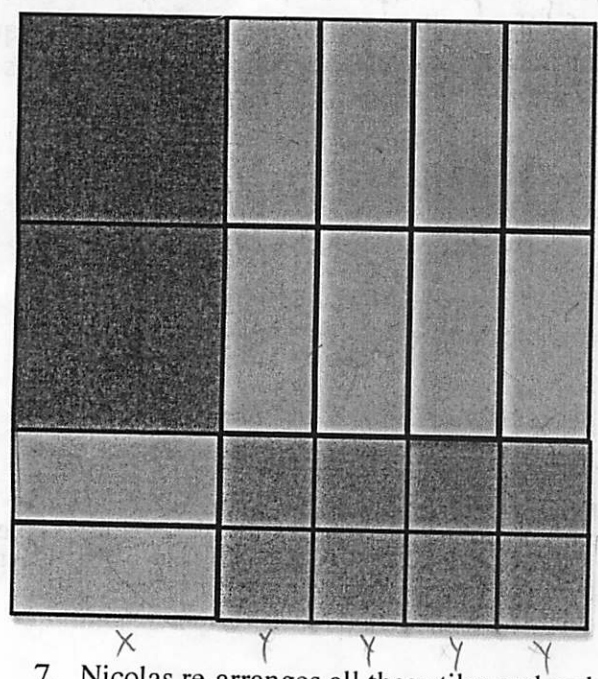
The area is $X + Y \cdot X + Y$ because the way you find area is length \cdot width.

PAIN
is my
good
friend

Hi
best
friend

Hi
Cat

Nicolas creates a different rectangular configuration out of the three tiles.



x 5. What are the side lengths of the rectangular configuration?

x $2x + 2y$ $x + 4y$

6. What is the area of the rectangular configuration?

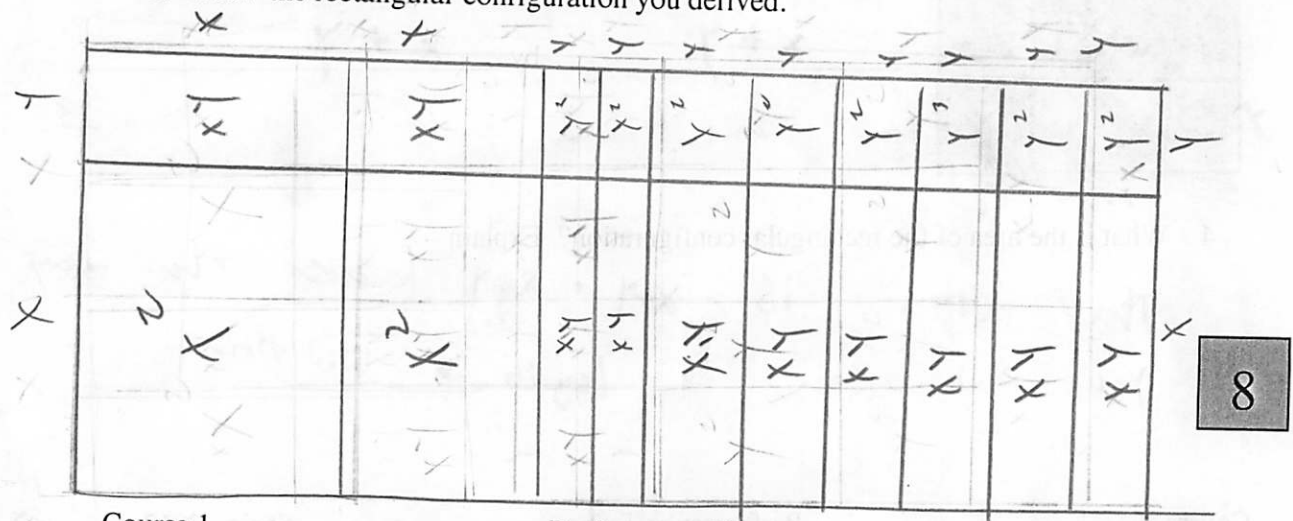
x $(2x + 2y)(x + 4y)$

y $2x^2 + 10xy + 8y^2$

7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

$2x^2$ x^2 The side lengths are $2x + 8y$ and $x + y$.

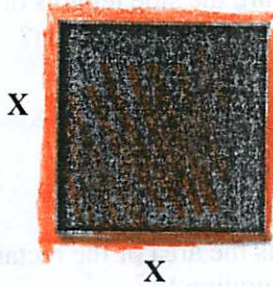
8. Draw the rectangular configuration you derived.



8

Rectangular Tiles

Nicolas is making rectangular designs out of different tiles. He uses two different sized squares that will never line up exactly, no matter how many tiles are used. Nicolas labels the sides of the big square **X** and the sides of the small square **Y**.



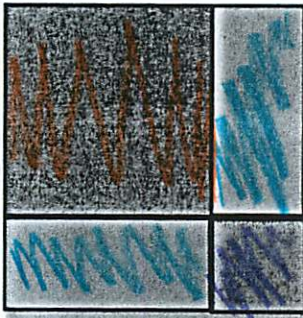
1. What is the area of the large square? X^2

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is **X**, the same as a side of the large square. The width of the rectangle is **Y**, the same as a side of the small square.



2. What is the area of the rectangle? XY

Nicolas arranges the tiles in a rectangular configuration.



3. What are the lengths of sides of the rectangular configuration?

$X+Y$ by $X+Y$

4. What is the area of the rectangular configuration? Explain

The area is orange² + 2xy + purple²
 $(X+Y)^2$
 $(X+Y) \times (X+Y)$
 $X^2 + Y^2 + XY + XY$

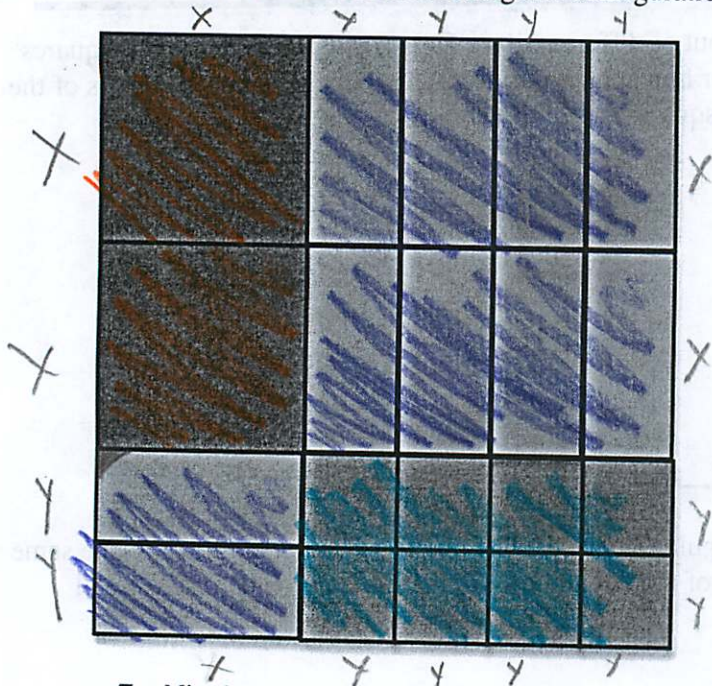
Course 1

Performance Test

Spring 2012

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Nicolas creates a different rectangular configuration out of the three tiles.



5. What are the side lengths of the rectangular configuration?

$x+x+y+y$ and
 $x+y+y+y$

6. What is the area of the rectangular configuration?

$2 \text{ orange}^2 + 10 \text{ purple} + 8 \text{ blue}^2$
 $2x^2 + 10xy + 8y^2$
 $(x+y+y+y)^2 + (x+y+y+y)y$

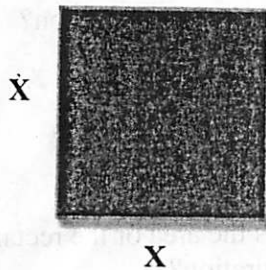
7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

8. Draw the rectangular configuration you derived.



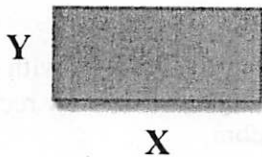
Rectangular Tiles

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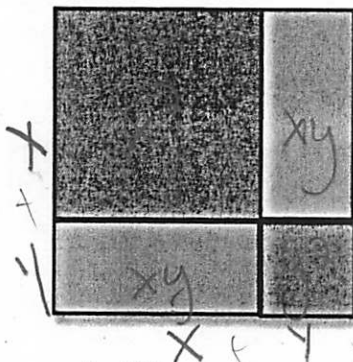
1. What is the area of the large square? X^2

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is **X**, the same as a side of the large square. The width of the rectangle is **Y**, the same as a side of the small square.



2. What is the area of the rectangle? $X \times Y = XY$

Nicolas arranges the tiles in a rectangular configuration.



3. What are the lengths of sides of the rectangular configuration?

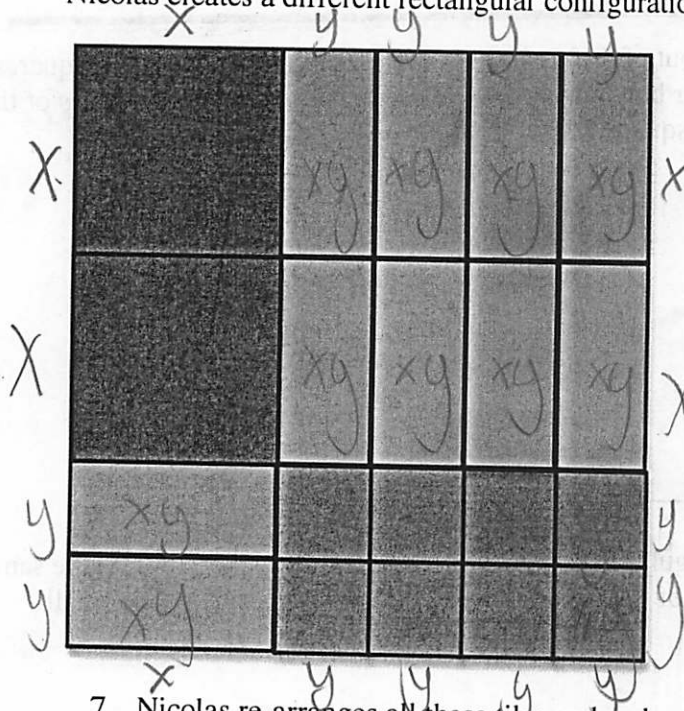
$(X+Y)$ by $X+Y$

4. What is the area of the rectangular configuration? Explain

$$(X+Y) \cdot (X+Y) = (X+Y)^2$$

$$X^2 + Y^2 + Xy + Xy \quad X^2 + 2Xy + Y^2$$

Nicolas creates a different rectangular configuration out of the three tiles.



5. What are the side lengths of the rectangular configuration?

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

6. What is the area of the rectangular configuration?

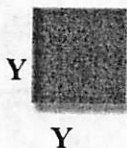
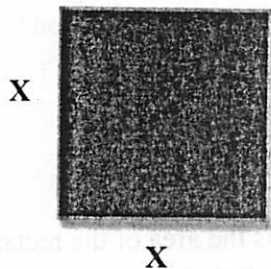
$$(2x^2 + 10xy + 8y^2)$$

7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

8. Draw the rectangular configuration you derived.

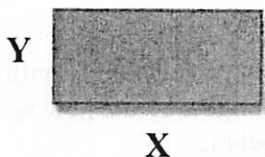
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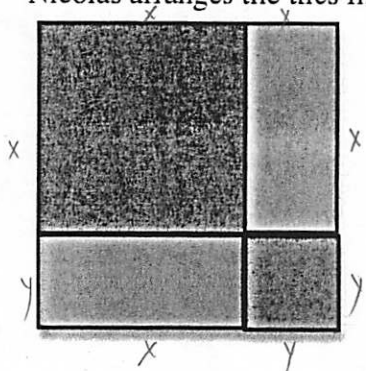
1. What is the area of the large square? x^2

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is **X**, the same as a side of the large square. The width of the rectangle is **Y**, the same as a side of the small square.



2. What is the area of the rectangle? $x \cdot y$

Nicolas arranges the tiles in a rectangular configuration.



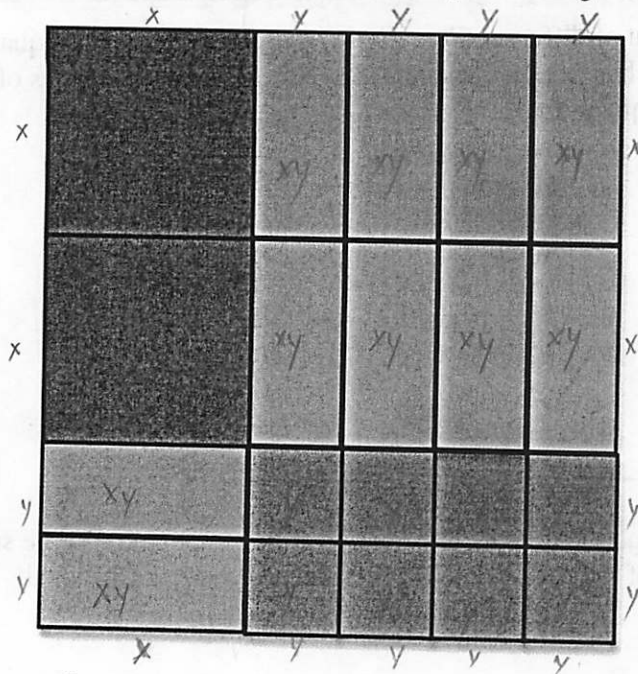
3. What are the lengths of sides of the rectangular configuration?

$x+y$ by $x+y$

4. What is the area of the rectangular configuration? Explain

The area of the rectangular configuration is $x+y^2$ because the side lengths are $x+y$ and to find the area you have to multiply $x+y$ by $x+y$ which is $x+y^2$.

Nicolas creates a different rectangular configuration out of the three tiles.



5. What are the side lengths of the rectangular configuration?

$2x + 2y$ by $x + 4y$

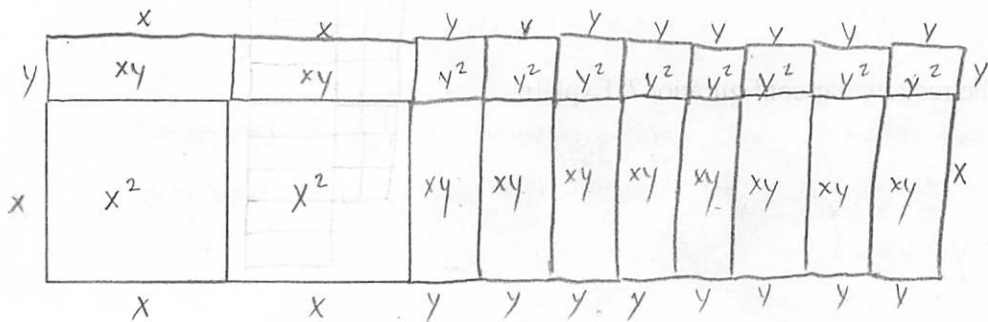
6. What is the area of the rectangular configuration?

$2x^2 + 10xy + 8y^2$

7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

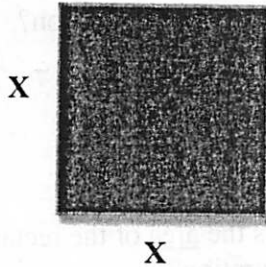
The side lengths are $2x + 8y$ by $x + y$.

8. Draw the rectangular configuration you derived.



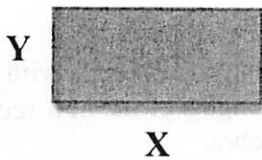
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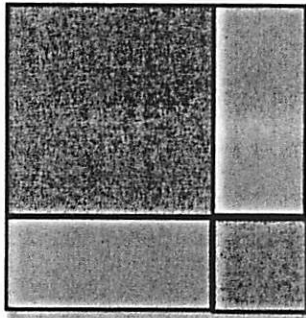
1. What is the area of the large square? x^2

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is **X**, the same as a side of the large square. The width of the rectangle is **Y**, the same as a side of the small square.



2. What is the area of the rectangle? $x \cdot y$

Nicolas arranges the tiles in a rectangular configuration.



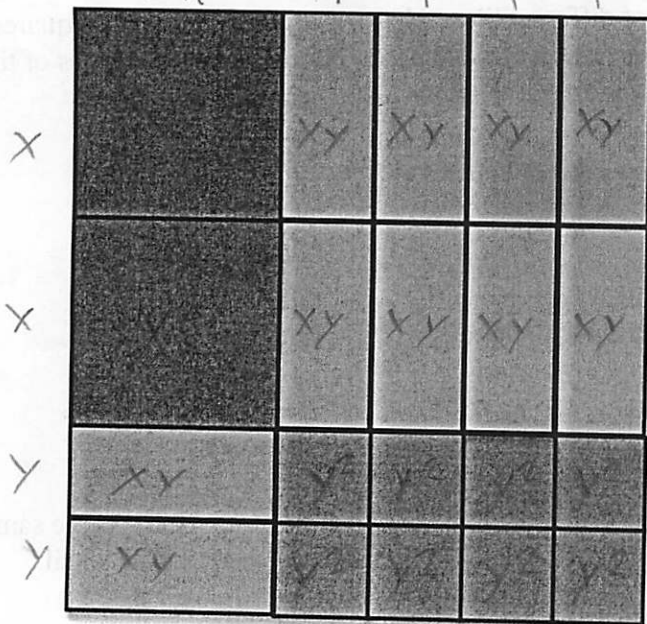
3. What are the lengths of sides of the rectangular configuration?

$x+y$ by $x+y$

4. What is the area of the rectangular configuration? Explain

The area of the rectangular is $x+y^2$ because both sides are $x+y$ by $x+y$ so you would have to multiple $x+y$ by $x+y$ and you would get $x+y^2$.

Nicolas creates a different rectangular configuration out of the three tiles.



5. What are the side lengths of the rectangular configuration?

$$2x + 2y \text{ by } x + 4y$$

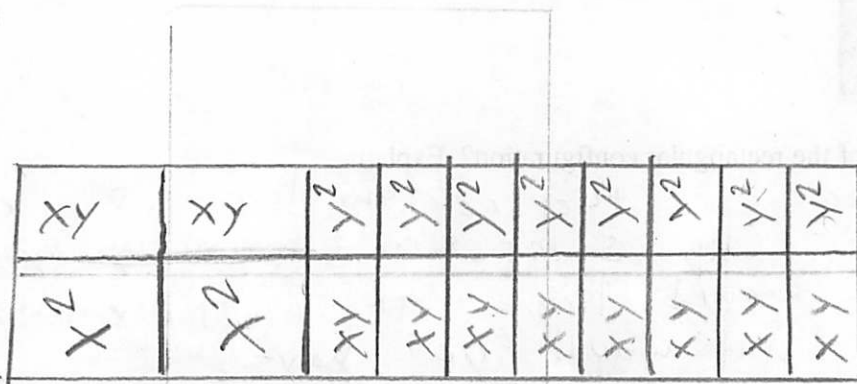
6. What is the area of the rectangular configuration?

$$2x^2 + 10xy + 8y^2$$

7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

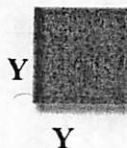
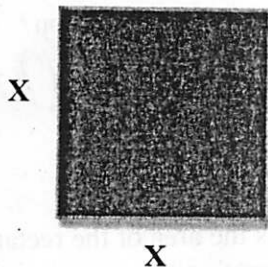
The side lengths are $2x + 8y$ by $x + y$ and the area is $2x^2 + 10xy + 8y^2$.

8. Draw the rectangular configuration you derived.



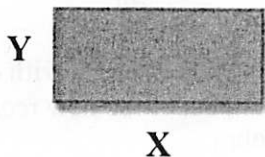
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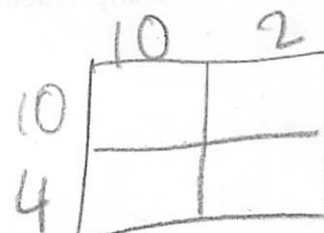
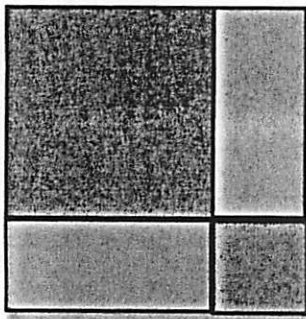
1. What is the area of the large square? X^2

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is **X**, the same as a side of the large square. The width of the rectangle is **Y**, the same as a side of the small square.



2. What is the area of the rectangle? XY

Nicolas arranges the tiles in a rectangular configuration.

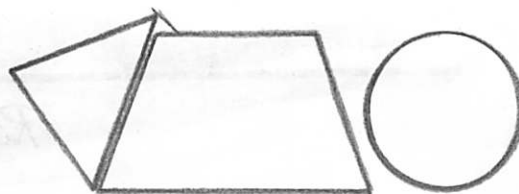


3. What are the lengths of sides of the rectangular configuration?

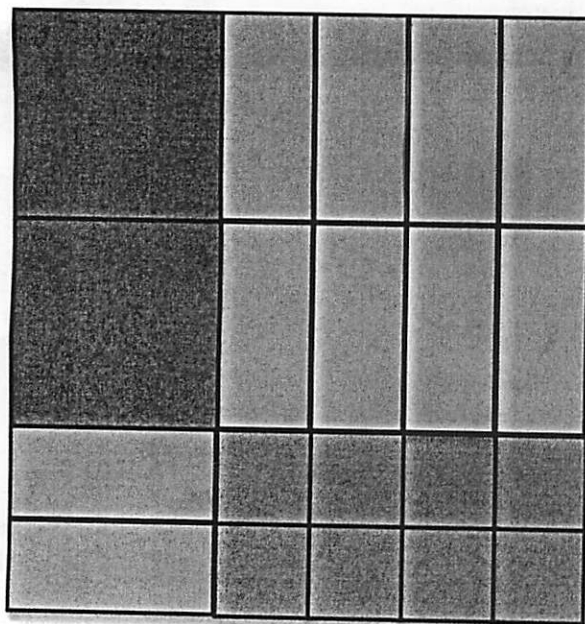
$X+Y$ by $X+Y$

4. What is the area of the rectangular configuration? Explain

The area of the rectangular configuration is $(X+Y)^2$ or $(X+Y)(X+Y)$



Nicolas creates a different rectangular configuration out of the three tiles.



5. What are the side lengths of the rectangular configuration?

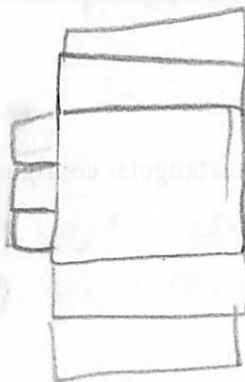
$$(x+4y) \text{ by } (2x+2y)$$

6. What is the area of the rectangular configuration?

$$2x^2 + 10xy + 8y^2$$

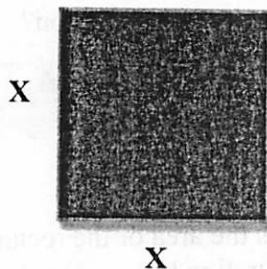
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8. Draw the rectangular configuration you derived.



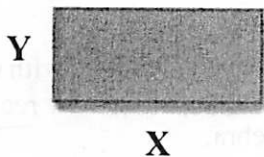
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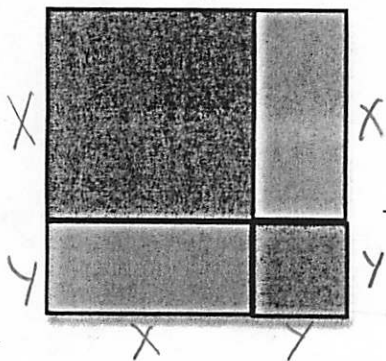
1. What is the area of the large square? X^2

Nicolas uses one more tile that is rectangular in shape. The length of the rectangle is **X**, the same as a side of the large square. The width of the rectangle is **Y**, the same as a side of the small square.



2. What is the area of the rectangle? Xy

Nicolas arranges the tiles in a rectangular configuration.

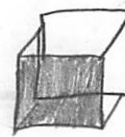


3. What are the lengths of sides of the rectangular configuration?

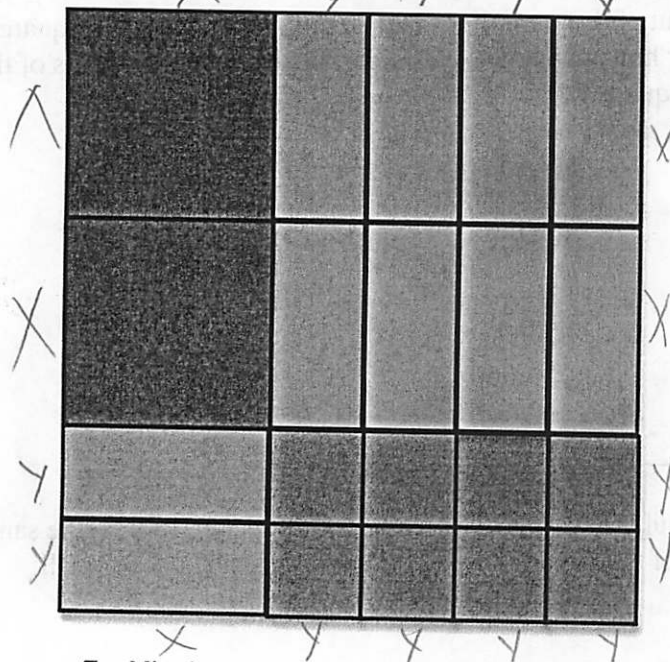
$X+Y$ by $X+Y$

4. What is the area of the rectangular configuration? Explain

$$X+Y = X+Y$$



Nicolas creates a different rectangular configuration out of the three tiles.



5. What are the side lengths of the rectangular configuration?

$$2x + 2y \text{ by } x + 4y$$

6. What is the area of the rectangular configuration?

$$10xy + 2x^2 + 8y^2$$

7. Nicolas re-arranges all these tiles and makes another shaped rectangle with different side lengths than the rectangle above. Determine the side lengths of the new rectangular configuration? Show how you figured it out using algebra.

8. Draw the rectangular configuration you derived.

I want to go home