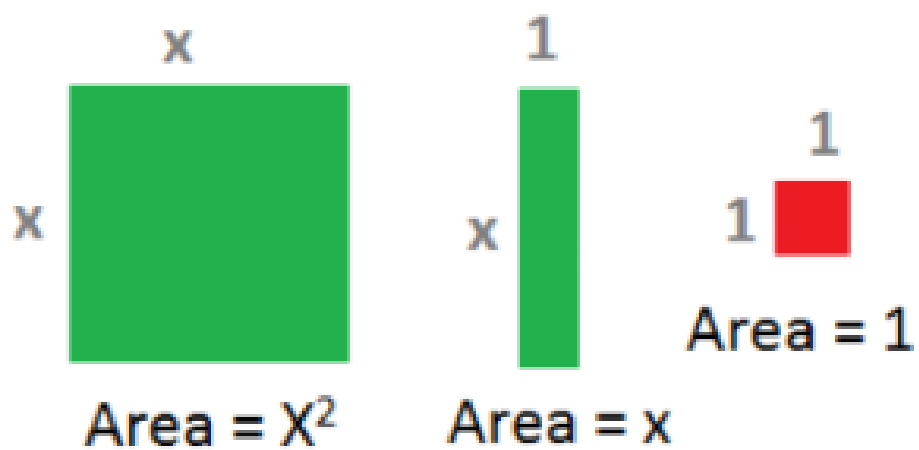


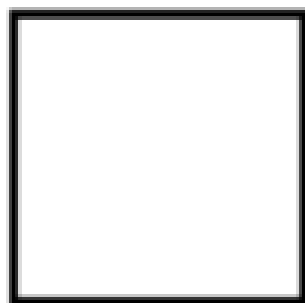
Algebra tiles are square and rectangular shaped objects whose **AREAS** are used to represent different algebraic expressions.

The **shape**, **size**, and **colour** of the objects all mean something.

Coloured tiles represent positive values.



White tiles represent negative values.



Area = $-X^2$

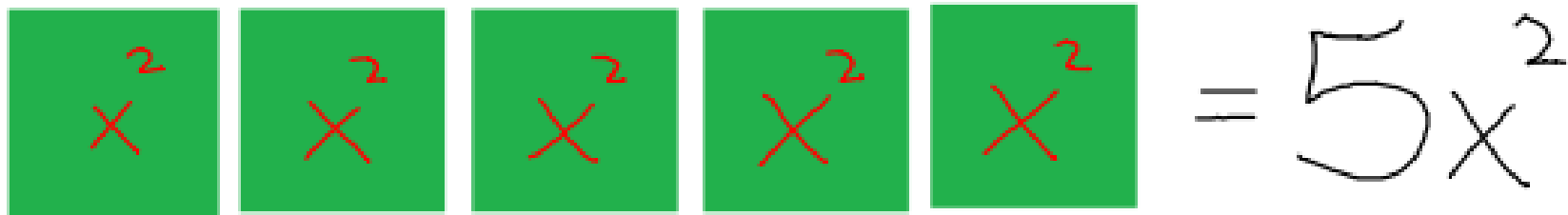


Area = $-x$



Area = -1

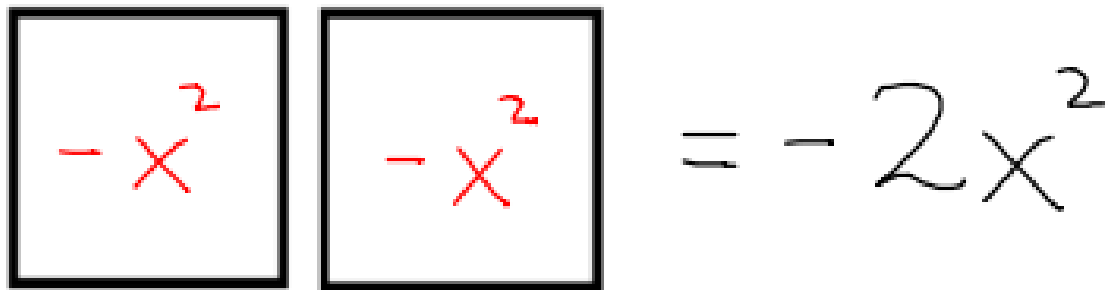
Grouping together algebra tiles of the **same shape and size** creates monomials whose **coefficients** represent "**how many** of them are there". The coefficient will be negative if the shapes are white:



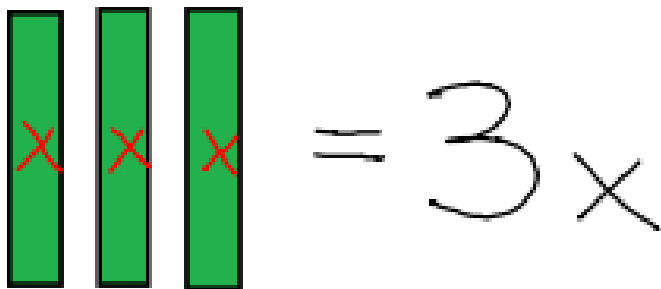
The image shows five green squares arranged horizontally. Each square contains a red 'x' with a superscript '2' above it. To the right of these squares is an equals sign followed by a handwritten '5' and another 'x' with a superscript '2' above it.

$$x^2 + x^2 + x^2 + x^2 + x^2 = 5x^2$$

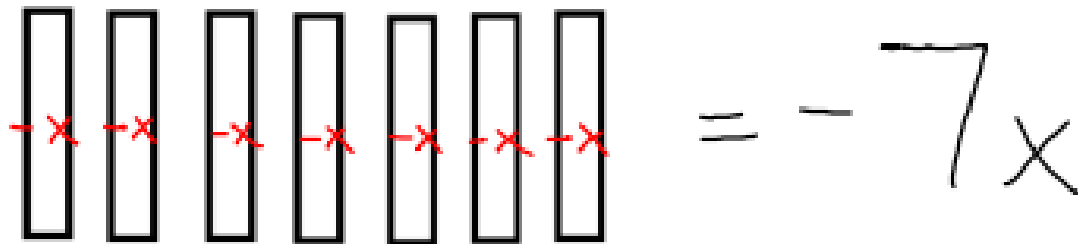
Grouping together algebra tiles of the same shape and size creates monomials whose coefficients represent "how many of them are there". The coefficient will be negative if the shapes are white:


$$\boxed{-x^2} \quad \boxed{-x^2} = -2x^2$$

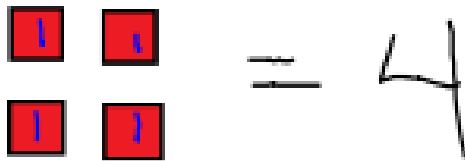
Grouping together algebra tiles of the same shape and size creates monomials whose coefficients represent "how many of them are there". The coefficient will be negative if the shapes are white:


$$\begin{array}{|c|} \hline x \\ \hline \end{array} \begin{array}{|c|} \hline x \\ \hline \end{array} \begin{array}{|c|} \hline x \\ \hline \end{array} = 3x$$

Grouping together algebra tiles of the same shape and size creates monomials whose coefficients represent "how many of them are there". The coefficient will be negative if the shapes are white:


$$\begin{array}{ccccccc} \boxed{} & \boxed{} & \boxed{} & \boxed{} & \boxed{} & \boxed{} & \boxed{} \\ -x & -x & -x & -x & -x & -x & -x \end{array} = -7x$$

Grouping together algebra tiles of the same shape and size creates monomials whose coefficients represent "how many of them are there". The coefficient will be negative if the shapes are white:


$$\begin{array}{cc} \color{red}\blacksquare & \color{red}\blacksquare \\ \color{red}\blacksquare & \color{red}\blacksquare \end{array} = 4$$

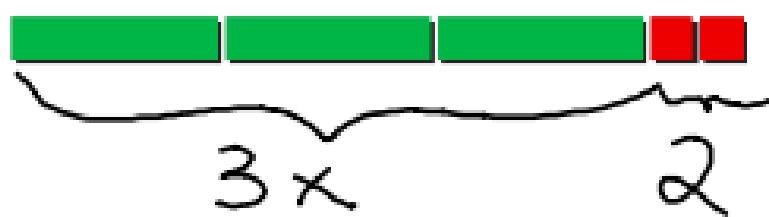
Grouping together algebra tiles of the same shape and size creates monomials whose coefficients represent "how many of them are there". The coefficient will be negative if the shapes are white:

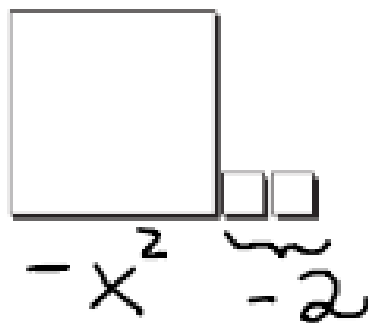
$$\boxed{-1} \boxed{-1} \boxed{-1} \boxed{-1} \boxed{-1} \boxed{-1} = -6$$

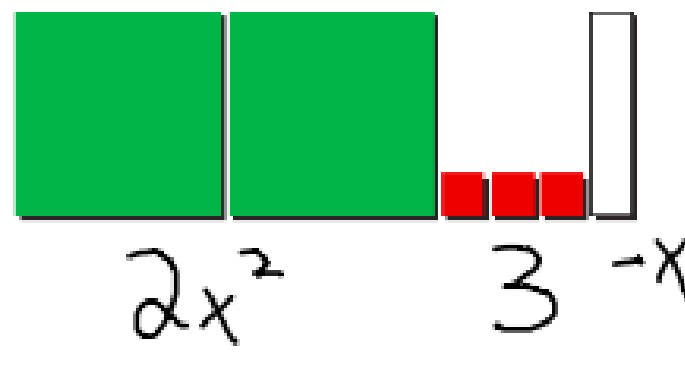
Grouping together algebra tiles of different shapes and sizes create polynomials. The coefficients on each term represent "how many" of that shape and size are there". Colour (or lack of colour) tells us whether we have positives or negatives:

$$\underbrace{\text{3 green rectangles}}_{3x} + \underbrace{\text{5 red squares}}_5 = 3x + 5$$

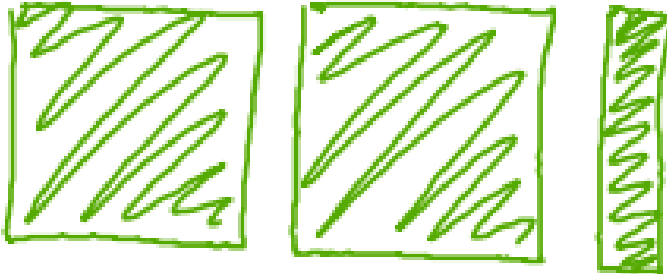
What polynomials are represented by the tiles?

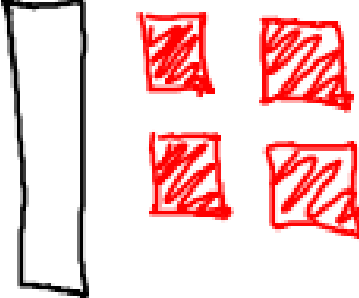

$$= 3x + 2$$



$$= -x^2 + (-2) \Rightarrow -x^2 - 2$$


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

Model each polynomial with algebra tiles:

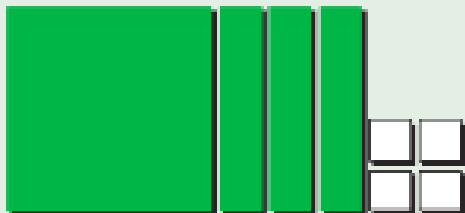
$$2x^2 + x =$$
The diagram shows two large green squares, each representing x^2 , and one vertical green rectangle representing x . The squares are filled with diagonal hatching.

$$-x + 4 =$$
The diagram shows one vertical white rectangle representing $-x$ and four small red squares representing 4 . The red squares are arranged in a 2x2 grid.

$$x^2 - 2x - 1 =$$
The diagram shows one large green square representing x^2 , two vertical white rectangles representing $-2x$, and one small white square representing -1 . The green square is filled with diagonal hatching.

Show You Know

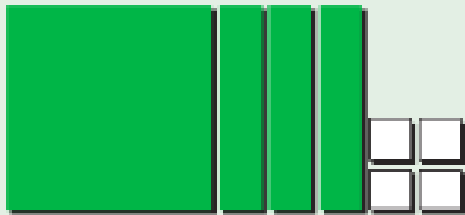
- a) Model $-x^2 + 4x - 3$.
- b) What expression is shown by the algebra tile model?



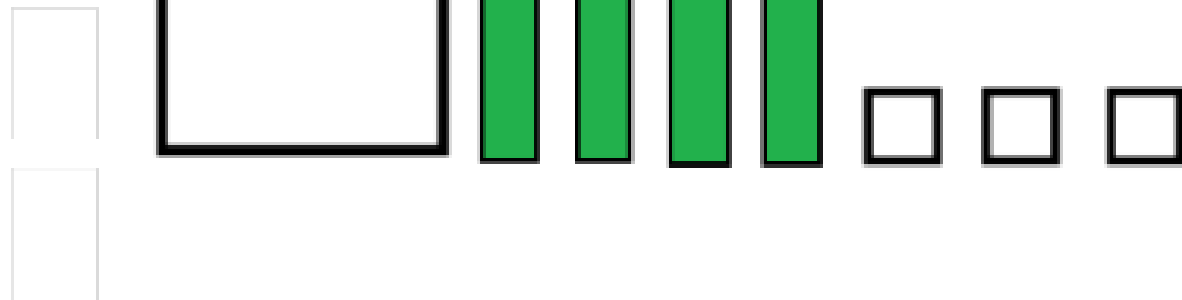
Show You Know

a) Model $-x^2 + 4x - 3$.

b) What expression is shown by the algebra tile model?



a)



b) $x^2 + 3x - 4$

Check your understanding:

Pg. 179-180

#11, 12, 13, 14