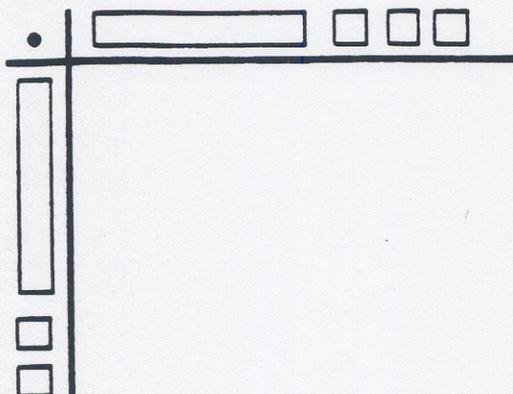


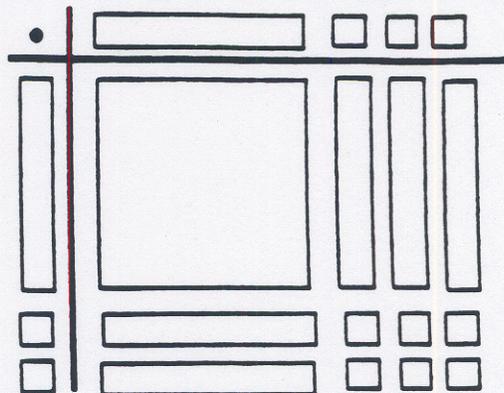
MULTIPLICATION OF POLYNOMIALS

A multiplication grid can be used to illustrate the product of two polynomials. The first factor is placed vertically and the second factor is placed horizontally.

Multiply $(x + 2)(x + 3)$

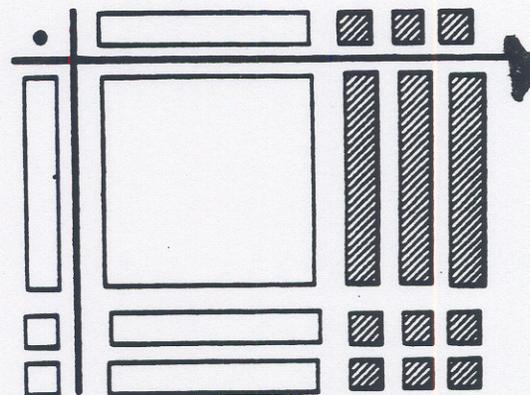
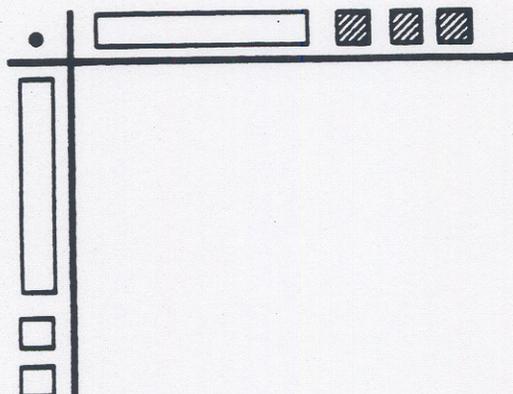


Fill in the grid with the proper tiles.



$$(x + 2)(x + 3) = x^2 + 5x + 6$$

Multiply $(x + 2)(x - 3)$

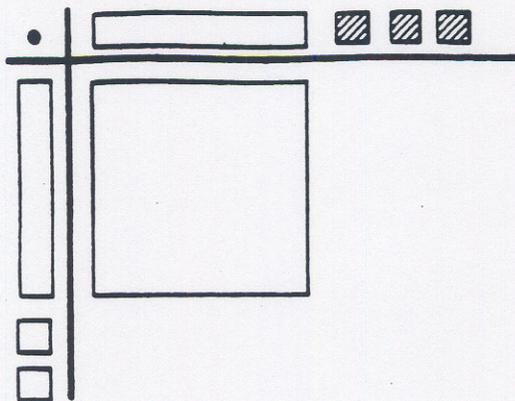


Use zero pairs to simplify.

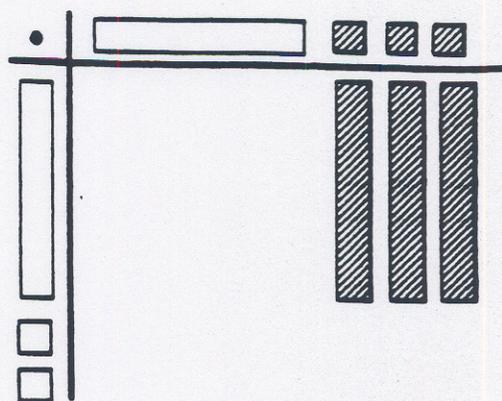
$$(x + 2)(x - 3) = x^2 - x - 6$$

Look for a pattern in the two diagrams. Can you see how each term of the product is obtained from the arrangement?

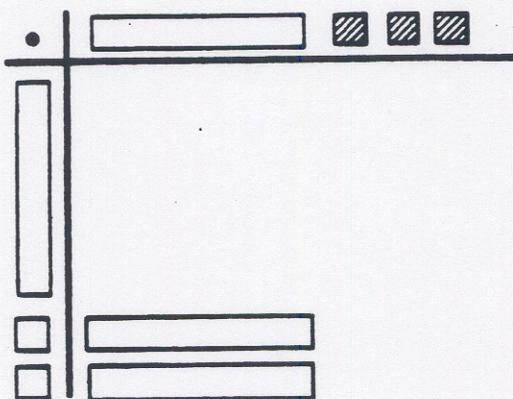
Multiply $(x + 2)(x + [-3])$



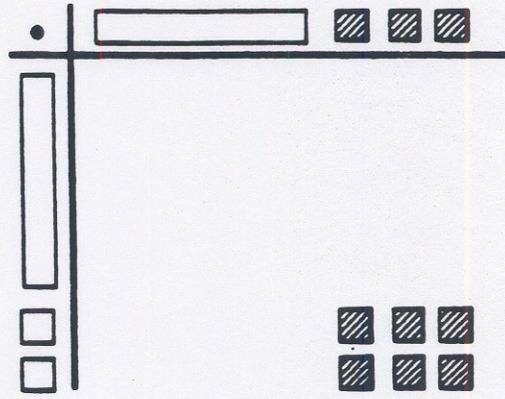
$$x \cdot x = x^2$$



$$x \cdot [-3] = -3x$$



$$2 \cdot x = 2x$$



$$2 \cdot -3 = -6$$

First $(x + 2)(x + [-3])$

$$x \cdot x = x^2 \quad \text{distribute the } x \text{ over } x + [-3]$$

Second $(x + 2)(x + [-3])$

$$x \cdot -3 = -3x$$

Third $(x + 2)(x + [-3])$

$$2 \cdot x = 2x \quad \text{distribute the } 2 \text{ over } x + [-3]$$

Fourth $(x + 2)(x + [-3])$

$$2 \cdot -3 = -6$$

Fifth combine like terms

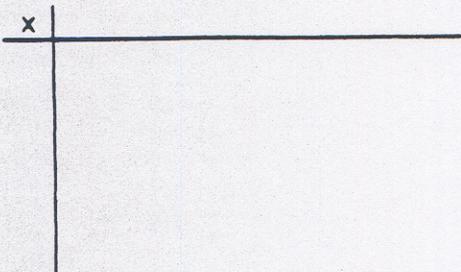
$$x^2 - x - 6$$

Name _____

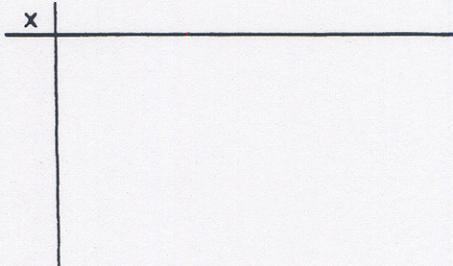
Multiplying Polynomials

Use algebra tiles to find each product. Draw a diagram to represent your answer.

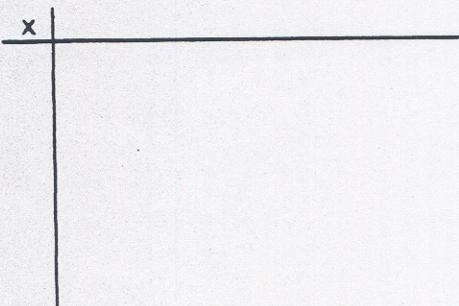
[1] $(x + 1)(x + 2) =$ _____



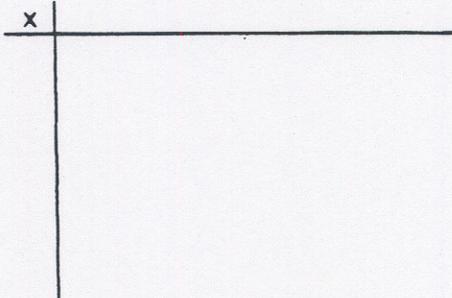
[2] $(x + 1)(x - 3) =$ _____



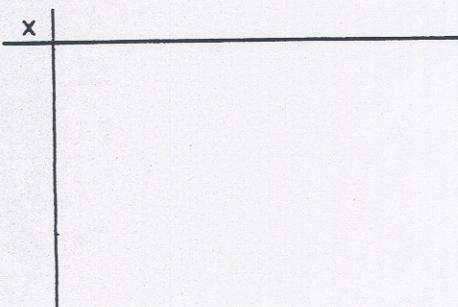
[3] $(x - 2)(x - 4) =$ _____



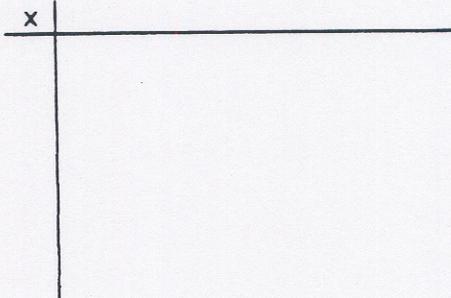
[4] $(x + 1)(2x + 2) =$ _____



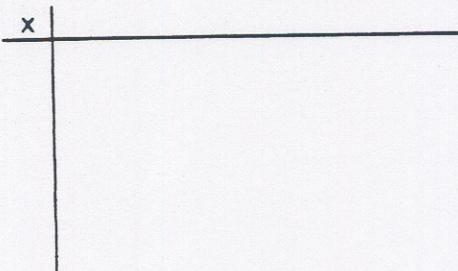
[5] $(x - 1)(2x + 2) =$ _____



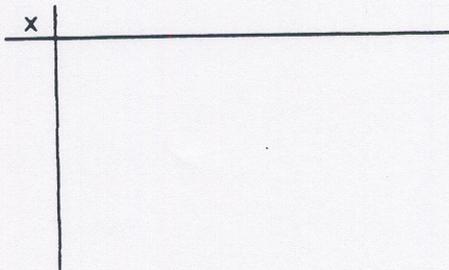
[6] $(x - 3)(2x - 1) =$ _____



[7] $(x + 4)(x + 6) =$ _____



[8] $(x - 1)(x + 5) =$ _____



5th Six Weeks, Lesson 4, page 4

On the back, double check by doing box method.