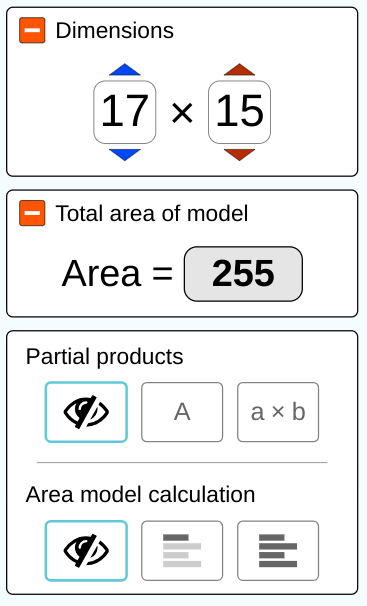
PhET Activity Sheet

Multiplying Polynomial Expressions

Visit the Area Model Algebra Simulation at the following URL: https://phet.colorado.edu/sims/html/area-model-algebra/latest/area-model-algebra\_en.html

Take 5-10 minutes to experiment and play with the EXPLORE button of the simulation.

Be sure to investigate the following:

\*how to change the dimensions of the shaded region (gray rectangle)

\*how to change the position of the horizontal (blue) and vertical (red) lines that divide the shaded region

\*reveal how the Partial Products and Area Calculation features support the total area of the model

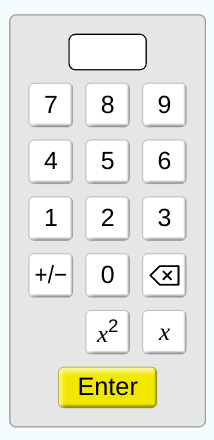
Next, take 5-10 minutes to experiment and play with the GENERIC button of the simulation.

Be sure to investigate the following:

\*how to use the keypad to enter distances along each edge of the large square

\*how to change the number of partitions along each edge of the large square





Finally, take 5-10 minutes to experiment and play with the VARIABLES button of the simulation.

Be sure to investigate the following:

\*how to use the keypad to enter variables and numbers along each edge of the large square

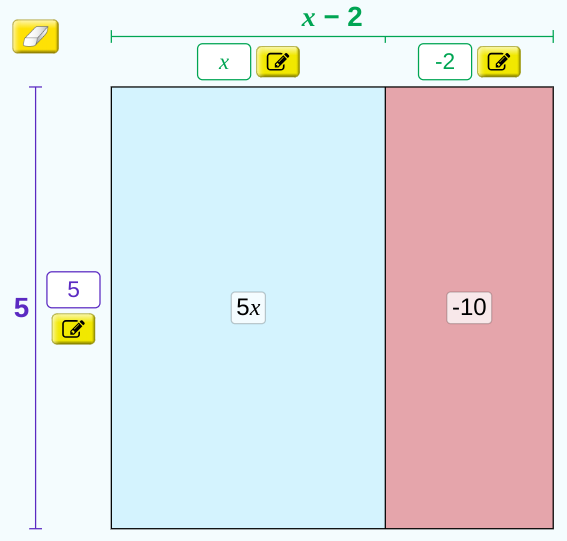
\*how to change the number of partitions along each edge of the large square



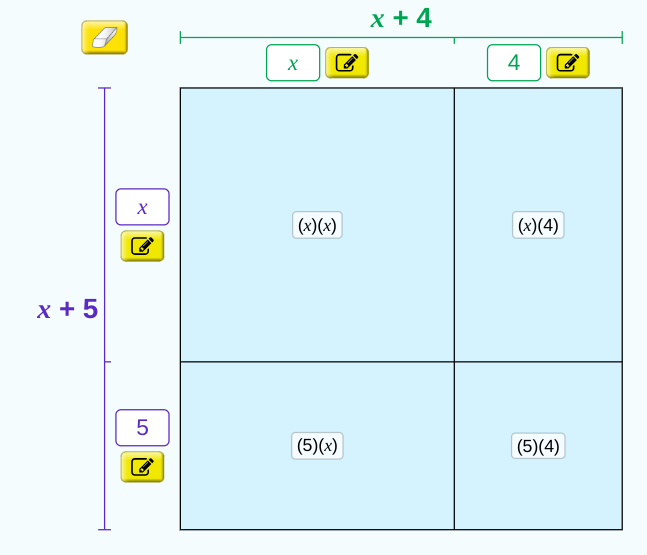
PhET Activity Sheet NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Multiplying Polynomial Expressions Date \_\_\_\_\_\_\_\_\_\_\_\_\_ Class \_\_\_\_\_\_

Use the VARIABLES option from the Algebra Model Area Simulation to create the following:

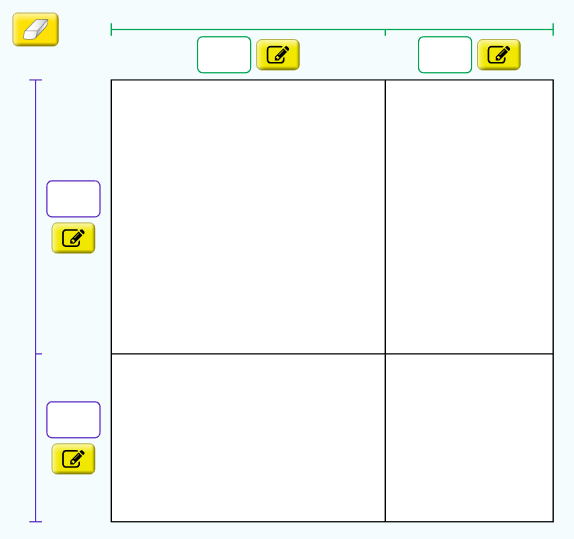


In the space below, use the distributive property to calculate the total area of the divided rectangle to the right.



Calculate the area of each sub-region within the divided rectangle to the right.

In the space below, show how to use the area of each sub-region to calculate the total area of the divided rectangle to the right.



Fill in the four spaces outside of the divided rectangle to model the given AREA equation and then calculate the area of each sub-region.

Next, find the total area of the divided rectangle.

Use divided rectangles to find the product for each: