Exercise 85
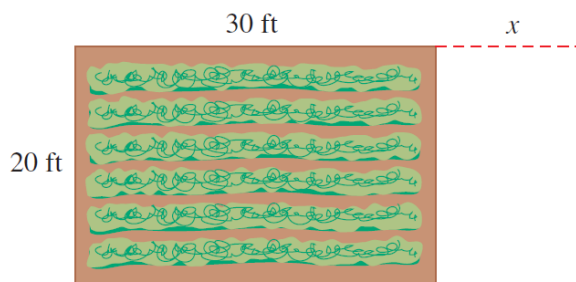
Area of a Garden Mary's backyard vegetable garden measures 20 ft by 30 ft, so its area is $20 \times 30 = 600$ ft^2. She decides to make it longer, as shown in the figure, so that the area increases to $A = 20(30 + x)$. Which property of real numbers tells us that the new area can also be written $A = 600 + 20x$?

Solution

The distributive property of real numbers allows us to write the formula for area as

$$A = 20(30 + x)$$
$$= 20(30) + 20(x)$$
$$= 600 + 20x.$$