**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Algebra Concepts – Lesson 3-5**

**(Solving Equations with Fractions)**

**Big Idea**

Now that you have used several visual models to solve real-life problems involving fractions, it’s time to take a look at fractions in algebra. The visual models that we have been using can easily be adapted to solving equations with fractions.

The denominator (bottom) of the fraction shows us how many parts to break our rectangle into.

The numerator (top) of a fraction shows us how many parts of the rectangle to assign to a given number.

The phrase  of a number is 15 is equivalent to the equation:

.

Realize that if part of a number is 15, then the number itself must be greater than 15. This is clear from the model that we use to solve the equation.

|-----------------------------------------*x*---------------------------------------------|

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |

|-----------------------15--------------------------|

To solve this equation, we must first determine what number goes in each box. What number goes in each box in this example?

Once we know the number in each box, it is simple to find *x* by adding up the numbers in the boxes or multiplying the number in each box by the number of boxes.

If , then *x =* 25.

**Guided Practice**

**Find the value of *x* in each equation below.**

1. 

|--------------------------------------------------*x*------------------------------------------------|

|  |  |  |
| --- | --- | --- |
|  |  |  |

|---------------------------8----------------------------|

2. 

|-------------------------------------------*x*------------------------------------------|

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

|-------------------------------12-------------------------------|

**Build your own model and use it to solve the equation.**

3. 

4. 

5. 

**Challenge**

6.  of the students at Kennett High School live in Conway. There are 352 students at Kennett High School that live in Conway. How many students go to Kennett?