

### Review of Homework #6

1. In a zoo there are birds with 2 legs each and mammals with 4 legs each. How many birds and mammals are in the zoo, if they have 6000 legs and 2500 heads altogether? (use substitution)

### Fractions.

#### Multiplication of a whole number by a fraction.

$$\frac{2}{3} \times 5 = \frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} \text{ (we add } \frac{2}{3} \text{ to itself 5 times)}$$

Of course we remember how to add fractions with the same denominator:

$$\frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} = \frac{2 + 2 + 2 + 2 + 2}{3}$$

$$\frac{2 + 2 + 2 + 2 + 2}{3} = \frac{2 \times 5}{3}$$

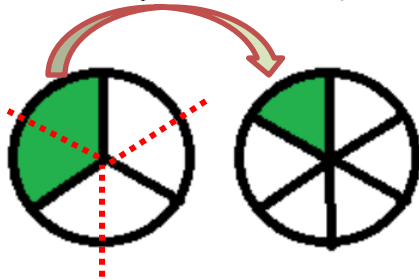
$$\frac{2}{3} \times 5 = \frac{2 \times 5}{3}$$

To multiply fraction by a whole number, multiply the numerator by this number

$$\frac{a}{b} \times c = \frac{a}{b} \times \frac{c}{1} = \frac{a \times c}{b}$$

## Multiplication of a fraction by a fraction.

Analogously,  $\frac{1}{2} \times \frac{1}{3}$  means  $\frac{1}{2}$  of  $\frac{1}{3}$ . Now, half of  $\frac{1}{3}$  piece of a disk is  $\frac{1}{6}$  of a disk (look at the picture below).



Notice that we could have just multiplied the denominators of  $\frac{1}{2}$  and  $\frac{1}{3}$ .

To multiply fraction by a fraction, multiply the numerators to get the numerator for the answer, multiply denominators to get denominator for the answer.

$$\frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times d}$$

**Compute:**

a)  $\frac{5}{12} - \frac{1}{4}$

b)  $\frac{3}{5} - \frac{3}{8}$

c)  $\frac{2}{5} \times \frac{3}{4} =$

e)  $\frac{4}{7} \times \frac{3}{4} =$

f)  $\frac{5}{8} \times \frac{4}{15} =$

g)  $\frac{1}{7} \times ? = \frac{5}{63}$

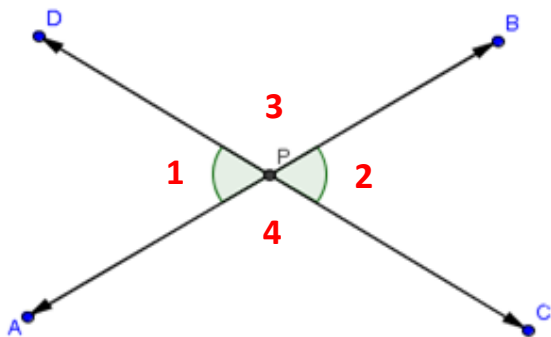
h)  $\frac{4}{9} \times ? = 1$

## Word Problems

There was  $\frac{1}{4}$  of the cake left after a Birthday party. Ann ate  $\frac{2}{3}$  of the leftover cake. How much of the original cake did she eat?

Ann ate  $\frac{1}{4}$  of the cake the first day, on the second day she ate  $\frac{2}{3}$  of the leftover cake. How much of the whole cake did she eat altogether?

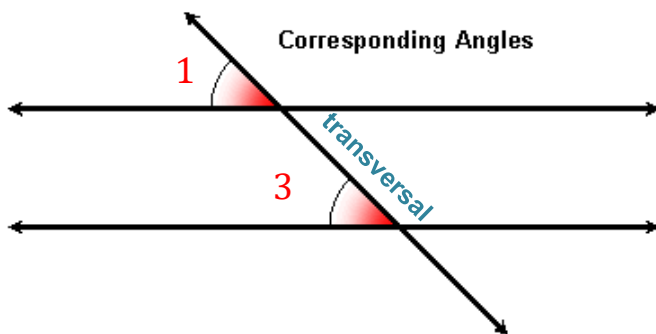
## Geometry



Remember vertical angles?

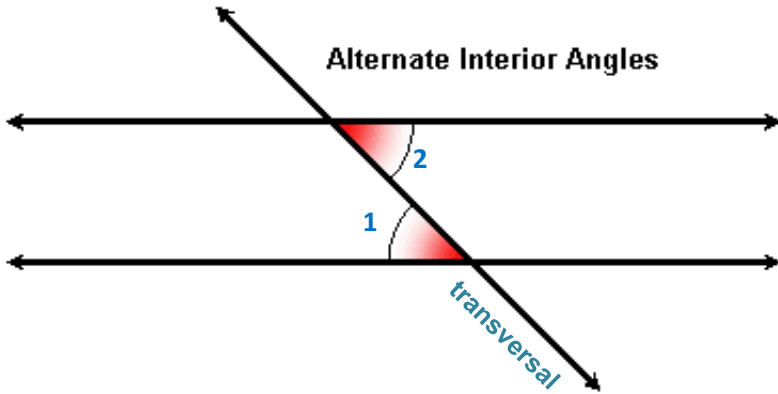
$$\angle 1 = \angle 2$$

$$\angle 3 = \angle 4$$



- A **transversal** is a **line** that passes through two **lines** in the same plane at two distinct points.
- The angles in matching corners are called **Corresponding Angles**.
- When the lines are parallel, that the **Corresponding Angles** are equal

$$\angle 1 = \angle 3$$



- The **angles** that are formed on opposite sides of the transversal and inside the two lines are **alternate interior angles**.
- When the lines are parallel, that the **alternate interior angles** are equal.

$$\angle 1 = \angle 2$$

**Find the missing angles**

