

## Fraction support:

### **1. Adding and subtracting fractions with the same denominator.**

$$2/9 + 5/9 = 7/9$$

$$7/8 - 5/8 = 2/8 = 1/4$$

### **2. Adding fractions with the same denominator making the answer bigger than 1 (improper fractions).**

$$4/7 + 4/7 = 8/7 = 1 \frac{1}{7} \text{ (8/7 is more than 1 which = 7/7)}$$

Therefore, there is 1/7 left making it 1 1/7).

### **3. Adding fractions with the same denominator making the answer bigger than 1 (improper fractions).**

$$3 \frac{4}{7} + 2 \frac{4}{7} = 5 \frac{8}{7} \text{ (improper), so the final answer = } 6 \frac{1}{7} \text{ (see 2)}$$

### **4. Subtracting fractions crossing 1**

$1 \frac{1}{4} - 2/4 =$  First you take away  $1/4$  which leaves you with 1. Now you take away the other  $1/4$  which makes  $3/4$ .

*You can also change  $1 \frac{1}{4}$  into  $5/4$  and then take  $2/4$  away!!*

$1 \frac{5}{8} - 7/8 =$  First you take away  $5/8$  which leaves you with 1.

Now you take away the other  $2/8$  which makes  $6/8$  Or  $3/4$ .

*You can also change  $1 \frac{5}{8}$  into  $13/8$  and then take  $7/8$  away!!*

### **5. Multiplying fractions**

$5 \times 3/4 = 15/4$  (the name stays the same!)  $15/4 = 3 \frac{3}{4}$  (1 whole =  $4/4$ , 2 wholes  $8/4$ , 3 wholes  $12/4$  and then there are  $3/4$  left.

$$6 \times 3/8 = 18/8 = 2 \frac{2}{8} = 2 \frac{1}{4}$$

### **6. Multiplying mixed numbers**

$$5 \times 1 \frac{3}{5} = 5 (5 \times 1) \frac{15}{5} (5 \times 3/5) = 8 (15/5 = 3)$$

$$6 \times 2 \frac{2}{3} = 12 (6 \times 2) \frac{12}{3} (6 \times 2/3) = 16 (12/3 = 4)$$

### **7. Multiplying fractions (top x top, bottom x bottom)**

$$3/4 \times 3/4 = 9/4 = 2 \frac{1}{4}$$

$$5/8 \times 3/4 = 15/32$$

### **8. Multiplying 2 mixed numbers**

$$1 \frac{2}{3} \times 1 \frac{6}{7} = 5/3 \times 13/7 = 65/21 = 3 \frac{2}{21}$$

$$2 \frac{4}{5} \times 1 \frac{3}{7} = 14/5 \times 10/7 = 140/35 = 4$$

## 9. Dividing fractions.

A:  $3/5 \div 3 = 1/5$   $4/7 \div 2 = 2/7$   $8/9 \div 4 = 2/9$

B:  $1/5$  of  $5/13 = 5/13 \div 5 = 1/13$   $1/4$  of  $16/21 = 16/21 \div 4 = 4/21$

C:  $1/3$  of  $15 = 15 \div 3 = 5$   $1/7$  of  $21 = 21 \div 7 = 3$

D: **Divide by the bottom, times by the top!!**

$3/4$  of  $20 =$  Step 1:  $20 \div 4 = 5$  Step 2: times 5 by 3 = 15

$5/7$  of  $35 =$  Step 1:  $35 \div 7 = 5$  Step 2: times 5 by 5 = 25

E: **Divide a fraction by a whole number**

$5/7 \div 3 = 5/7 \times 1/3 = 5/21$  (see multiplications 5)

$3/8 \div 7 = 3/8 \times 1/7 = 3/56$  (see multiplication 5)

F: **Divide a fraction by a fraction**

$3/5 \div 2/3$  (flip over)  $3/5 \times 3/2 = 9/10$  (t x t, b x b)

$2/7 \div 4/9$  (flip over)  $2/7 \times 9/4 = 18/28$  (t x t, b x b) =  $9/14$