

## MULTIPLYING FRACTIONS

\* MULTIPLY ACROSS \*

$$\frac{1}{3} \times \frac{1}{2} = \frac{1 \times 1}{3 \times 2} = \frac{1}{6}$$

SIMPLIFY BEFORE YOU MULTIPLY!

$$\frac{\overset{1}{\cancel{2}^2} \times \overset{2}{\cancel{8}^4}}{\underset{1}{\cancel{4}^4} \times \underset{3}{\cancel{6}^2}} = \frac{1 \times 2}{1 \times 3} = \boxed{\frac{2}{3}}$$

$$\frac{2}{4} \times \frac{8}{6} = \frac{16 \div 8}{24 \div 8} = \boxed{\frac{2}{3}}$$

YOU TRY:

$$1) \frac{7}{6} \times \frac{3}{9} = \frac{21 \div 3}{54 \div 3} = \boxed{\frac{7}{18}} \quad 2) \frac{1}{5} \cdot \frac{20}{3} =$$

$$\frac{7}{6} \times \frac{3}{9} = \boxed{\frac{7}{18}}$$

$$\frac{\overset{2}{\cancel{6}^2}}{\underset{1}{8}} \cdot \frac{\overset{4}{\cancel{20}^4}}{\underset{1}{3}} = \frac{8}{1} = \boxed{8}$$

$$3) \frac{\overset{1}{\cancel{12}^2} \times \overset{2}{\cancel{7}^1}}{\underset{1}{4} \times \underset{1}{3}} = \frac{7}{1} = \boxed{7}$$

$$4) \frac{1}{\cancel{3}} \cdot \frac{\cancel{3}}{4} = \boxed{\frac{1}{4}}$$

$$\frac{1}{3} \cdot \frac{3}{4} = \frac{3 \div 3}{12 \div 3} = \boxed{\frac{1}{4}}$$

$$5) \frac{2}{3} \cdot \frac{5}{6} = \frac{\cancel{2}}{3} \cdot \frac{5}{\cancel{6}} = \frac{5}{3} \quad \frac{\overset{1}{\cancel{2}}}{3} \cdot \frac{5}{\underset{3}{\cancel{6}}} = \frac{5}{3}$$

$$6) \frac{5}{6} \cdot 2 = \frac{5}{\cancel{6}} \cdot \frac{\overset{1}{\cancel{2}}}{1} = \frac{5}{3} = \frac{2}{3}$$

$$\frac{5}{6} \cdot \frac{12}{6} = \frac{60 \div 2}{36 \div 2} = \frac{30 \div 2}{18 \div 2} = \frac{15 \div 3}{9 \div 3} = \frac{5}{3}$$

$$\frac{5}{\cancel{6}} \cdot \frac{\overset{1}{\cancel{2}}}{\cancel{6}} = \frac{5}{3}$$

## DIVIDING FRACTIONS

def.

RECIPROCAL: IS ONE OF TWO NUMBERS WHOSE PRODUCT IS 1. IT IS THE RESULT OF "FLIPPING" A FRACTION OVER.

$$\frac{3}{4} \quad \overset{\text{REC}}{\frac{4}{3}} \qquad \frac{2}{1} \quad \overset{\text{REC}}{\frac{1}{2}}$$

$$\frac{3}{4} \cdot \frac{4}{3} = \frac{12}{12} = 1$$

WRITE THE RECIPROCAL

1)  $\frac{2}{3}$   $\frac{3}{2}$

2)  $\frac{3}{13}$   $\frac{13}{3}$

3)  $\frac{9}{10}$   $\frac{10}{9}$

4)  $4\frac{3}{8} = \frac{35}{8}$   $\boxed{\frac{8}{35}}$  5)  $5 = \frac{5}{1}$   $\boxed{\frac{1}{5}}$  6)  $7\frac{5}{9} = \frac{68}{9}$   $\boxed{\frac{9}{68}}$

7)  $2 = \frac{2}{1}$   $\boxed{\frac{1}{2}}$  8)  $10\frac{2}{19} = \frac{192}{19}$   $\boxed{\frac{19}{192}}$  9)  $3\frac{2}{3} = \frac{11}{3}$   $\boxed{\frac{3}{11}}$

### DIVIDING FRACTIONS

DIVIDING FRACTIONS ALGORITHM:

① K  
keep

② C  
cross  
to  
x

③ F  
Find  
the  
reciprocal  
p

$\frac{4}{5} \div \frac{2}{3}$        $\frac{4}{5} \times \frac{3}{2} = \boxed{\frac{6}{5} = 1\frac{1}{5}}$

1)  $\frac{5}{8} \div \frac{2}{3} = \frac{5}{8} \times \frac{3}{2} = \boxed{\frac{15}{16}}$

2)  $\frac{3}{10} \div \frac{1}{2} = \frac{3}{10} \times \frac{2}{1} = \boxed{\frac{3}{5}}$