GRADE 10 ESSENTIAL
UNIT X – PRIOR STUDIES
FRACTIONS - MIXED NUMBERS
FRACTIONS - MULTIPLY (Basic)

Name:_____
Date: _____

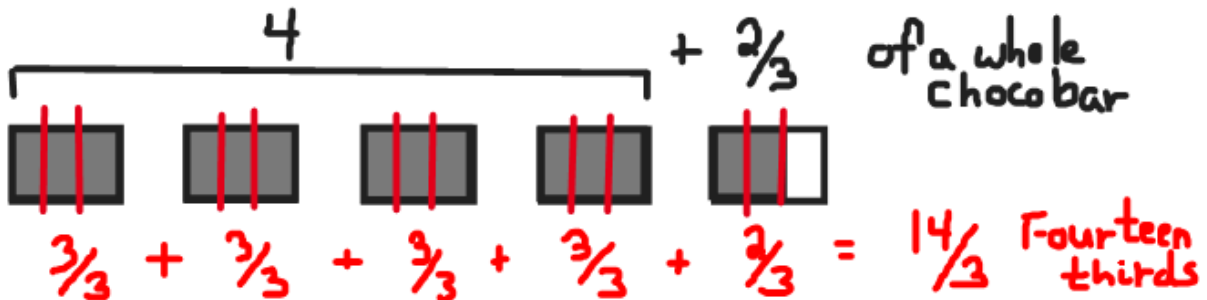## Lesson 4   Mixed Numerals to Fractions

$$4\frac{2}{3} = \frac{(3 \times 4) + 2}{3}$$

Multiply the denominator by the whole number and add the numerator.

$$3\frac{1}{6} = \frac{(\quad \times \quad) +}{6}$$

$$= \frac{12 + 2}{3}$$

Use the same denominator.

$$= \frac{\quad + \quad}{6}$$

$$= \frac{14}{3}$$

$$= \frac{\quad}{6}$$

Four whole chocolate bars and another two thirds of a chocolate bar [$4\frac{2}{3}$]

$$\tfrac{3}{3} + \tfrac{3}{3} + \tfrac{3}{3} + \tfrac{3}{3} + \tfrac{2}{3} = \tfrac{14}{3} \text{ Fourteen thirds}$$

Change each mixed numeral to a fraction.

	a	b	c
1.	$2\frac{5}{8}$	$2\frac{3}{5}$	$3\frac{2}{3}$
2.	$3\frac{7}{10}$	$10\frac{2}{3}$	$14\frac{1}{2}$
3.	$6\frac{7}{8}$	$5\frac{9}{10}$	$13\frac{5}{12}$

4. $4\dfrac{5}{6}$ $7\dfrac{3}{4}$ $8\dfrac{11}{12}$

Notice how being able to do simple multiplication sure makes fractions easy!

MULTIPLYING (PURE; PROPER) FRACTIONS

Lesson 5   Multiplication (fractions)

Multiply the numerators.

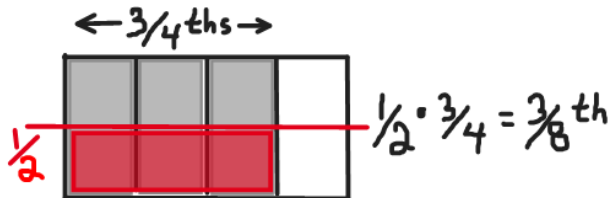$$\dfrac{2}{3} \times \dfrac{1}{5} = \dfrac{2 \times 1}{3 \times 5} = \dfrac{2}{15}$$

Multiply the denominators.

$$\dfrac{1}{2} \times \dfrac{3}{4} = \dfrac{1 \times 3}{2 \times 4}$$

$$\dfrac{2}{5} \times \dfrac{1}{3} = \dfrac{\times}{\times}$$

$$= \dfrac{3}{8}$$

$$=$$

Easy!   Straight across the top, straight across the bottom!
These ones are easy, they do not need to be 'reduced'.

What does it mean? Draw it! One half of three quarters is….

$\frac{1}{2} \cdot \frac{3}{4} = \frac{3}{8}$ th

Anytime you do not understand something, draw it, doodle, turn it into something you can relate to!
Dallas has three pieces of a 4 piece chocolate bar, if **I** have half of **his** ¾ ths of a whole chocolate bar then I have 3/8ths of a whole chocolate bar.

Multiply.

a	b	c

1. $\dfrac{1}{2} \times \dfrac{1}{3}$ $\dfrac{3}{4} \times \dfrac{1}{2}$ $\dfrac{1}{3} \times \dfrac{1}{4}$

2. $\dfrac{3}{5} \times \dfrac{3}{4}$ $\dfrac{4}{7} \times \dfrac{3}{5}$ $\dfrac{4}{5} \times \dfrac{2}{3}$

3. $\dfrac{2}{3} \times \dfrac{4}{5}$ $\dfrac{1}{8} \times \dfrac{1}{2}$ $\dfrac{5}{7} \times \dfrac{3}{4}$

You draw $\dfrac{2}{3} \cdot \dfrac{4}{5}$ →

4. $\dfrac{6}{7} \times \dfrac{3}{5}$ $\dfrac{2}{9} \times \dfrac{1}{3}$ $\dfrac{5}{8} \times \dfrac{3}{7}$

See why knowing your multiplication tables is so useful!

5. $\dfrac{7}{8} \times \dfrac{7}{8}$ $\dfrac{2}{3} \times \dfrac{2}{3}$ $\dfrac{4}{9} \times \dfrac{2}{3}$

Later we will need to learn to 'reduce' or 'simplify' fractions.

Example:

$$\dfrac{2}{3} \cdot \dfrac{3}{4} = \dfrac{6}{12} \text{ ; but } \dfrac{6}{12} \text{ is really } \dfrac{1}{2} !$$

And **later** we will learn to multiply Mixed Fractions

$$2\tfrac{1}{2} \cdot 3\tfrac{1}{4} = \dfrac{5}{2} \cdot \dfrac{13}{4} = \dfrac{65}{8} = 8\tfrac{1}{8}$$

Slowly putting it all together!!