Pre-Algebra Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per. \_\_\_\_\_\_ A or B

CC2 Ch. 2

**REDUCING FRACTIONS WS KEY**

(Mixed Numbers, Proper Fractions, & Improper Fractions)

**Directions**: REDUCE!!!!!!!!!!! ☺ ALL THE WAY!!!! Until you can’t anymore!!!!!!!!!!!

Every single problem on this worksheet will require you to reduce! For # 9 & 10, you may want to reduce first!

1.) $\frac{12}{34}= $ Divide each # by 2 first , 2.) $\frac{6}{14}= $ Divide each # by 2 first,

 $\frac{6}{17}$$\frac{3}{7}$

3.) $4\frac{15}{75}= $ Divide each # by 5 first, then 4.) $-7\frac{8}{36}= $ Divide each # by 4

 see if you can divide again.

 $4\frac{3}{15} = 4\frac{1}{5}$$-7\frac{2}{9}$

5.) $\frac{128}{62}= $ Both #s are even, so divide by 2 first, 6.) $-\frac{51}{17}= $This one is tricky, but 17 is a

 Then see if you can keep reducing… prime #, try dividing by 17 and

$\frac{64}{31}$$-\frac{3}{1}= -3$

7.) $-\frac{4}{10}= $Divide each # by 2 8.) $\frac{224}{48}= $Divide each # by 2 first, then

 see if you can keep reducing…

$-\frac{2}{5}$$\frac{112}{24}=\frac{56}{12}= \frac{28}{6}= \frac{14}{3}$

9.) $\frac{8}{16}-\frac{4}{10}= $ First, reduce 8/16 10.) $\frac{88}{40}-\frac{20}{8}=$ First, reduce 88/40

 $\frac{1}{2}-\frac{4}{10}= then get LCD of 10$ $\frac{11}{5}-\frac{5}{2}= then get LCD of 10$

$\frac{5}{10}-\frac{4}{10}= \frac{1}{10}$$\frac{22}{10}-\frac{25}{10}= \frac{-3 }{10}$

**REPEATING DECIMALS TO FRACTIONS**

**Directions:**

1. NEVER put “***repeater bars***” within a faction ☹ No 🡪 $\frac{\overline{37}}{100} \ne .\overline{373737}$ ; ☺ $\frac{37}{99}= .\overline{3737}$ (**Yes**)
2. If 1 digit repeats, place that number over **9**.
3. If 2 digits repeat, place that number over **99**.
4. If 3 digits repeat, place that number over **999**… etc!
5. REDUCE YOUR FINAL ANSWER (try dividing by 9 or 3 to get started).

**YOU TRY!** (Hint: they ALL need to be reduced!)

1. Change $ .\overline{27}$ to a fraction. Show your work and **REDUCE by 9**!

$$ .\overline{2727}= \frac{27}{99}= \frac{9}{33}= \frac{3}{11}$$

1. Change $ .\overline{6}$ to a fraction. Show your work and **REDUCE by 3**!

$$.\overline{66666}= \frac{6}{9}= \frac{2}{3}$$

1. Change $.\overline{357}$ to a fraction. Show your work and **REDUCE by 3**!

$$.\overline{357357357}= \frac{357}{999}= divide each \# by 3 so= \frac{119}{333}$$

1. Change $.\overline{0909}$ to a fraction. Show your work and **REDUCE by 9**!

$$.\overline{09090909}= \frac{09}{99}= \frac{9}{99}= \frac{1}{11}$$

1. Change $.\overline{012}$ to a fraction. Show your work and **REDUCE by 3**!

$$.\overline{012012}= \frac{012}{999}= \frac{12}{999}= \frac{4}{333}$$

1. Change $.\overline{070707}$ to a fraction. Show your work and REDUCE! (You can’t reduce this one)

$$\overline{070707}= \frac{07}{99}= \frac{7}{99}$$

**REVIEWING HOW TO ADD & SUBTRACT MIXED NUMBERS!**

You usually have **2 options** when adding or subtracting mixed numbers.

I will show you the ***same example*** evaluated in ***two*** *different ways*… take a look! ☺

• **Option 1**:

* Leave the whole number part of the mixed numbers and just find the LCD of the fractions
* Then add/subtract the whole numbers, then add/subtract the fraction portions (careful, you may need to borrow from one of the whole numbers in order to subtract your fractions)
* Make sure your final answer is REDUCED!

Ex: $9\frac{2}{5}-3\frac{3}{4}$ (*The LCD = 20)*

$9\frac{8}{20}-3\frac{15}{20}$

Borrow from the 9 so we can subtract 15/20.

$8\frac{28}{20}-3\frac{15}{20}$ now subtract $8-3 and \frac{28}{20}-\frac{15}{20}$

$Answer= 5\frac{13}{20} $

• **Option 2**:

* Covert ALL fractions to **improper fractions**, find the LCD, then add or subtract the fractions
* Make sure your final answer is REDUCED!

Ex: $9\frac{2}{5}-3\frac{3}{4}$ turns into $\frac{47}{5}-\frac{15}{4}$ after making both mixed numbers improper.

$\frac{47}{5}-\frac{15}{4} $ 🡪 With LCD of 20 you get 🡪 $\frac{188}{20}-\frac{75}{20}$

$\frac{188-75}{20} = \frac{113}{20} or 5\frac{13}{20}$

You can leave your answer as an improper fraction or a mixed number.

**NOTE**: No matter which of these two options you choose, work through the problem slowly and check that your final answer is reduced. ☺ Make sure to show your support work by showing your multiplication/addition/subtraction/division calculations. Do not do work in your head, please and thank you!