

Pre-Algebra Chapter 5 Pre-Test

1.) (5 pts each, 10 pts total) (2-1) Find the lowest common denominator (LCD) of each pair of fractions. Write equivalent fractions using the LCD and compare. Use  $>$ ,  $<$ , or  $=$  to compare each statement.

a)  $\frac{23}{36}$  and  $\frac{4}{6}$

$(36) \frac{23}{36} < \frac{4}{6} (144)$

$\frac{23}{36}$        $\frac{4 \times 6}{6 \times 6} = \frac{24}{36}$

b)  $\frac{5}{8}$  and  $\frac{8}{12}$

$\frac{23}{36} < \frac{24}{36}$

$1000n = 564.444\dots$   
 $- 100n = 56.444\dots$   
 $900n = 508$   
 $n = \frac{508}{900} = \frac{127}{225}$

2.) (5 pts) (2-2) Write the decimal as a fraction.

$n = 0.63333\dots$

$100n = 63.3333$   
 $- 10n = 6.3333\dots$   


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 $90n = 57$   
 $\frac{57}{90}$

$n = \frac{57}{90} \div 3 = \frac{19}{30}$

$100n = 63.3333\dots$   
 $n = 0.63333\dots$

$0.4444 \begin{cases} 100n \\ - n \end{cases}$  or  $0.5333 \begin{cases} 100n \\ - 10n \end{cases}$

3.) (5 pts each, 10 points total) Convert as required.

a) Write 0.65 as a fraction.

$0.65 = \frac{65}{100} \div 5 = \frac{13}{20}$

b) Write  $\frac{3}{8}$  as a decimal.

3 = Chris Rock      8 = Will Smith

$\frac{3}{8} = 0.375$

$3 \overline{) 3.000}$   
 $- 24 \downarrow$   
 $60$   
 $- 56 \downarrow$   
 $40$

4.) (5 pts each, 10 pts total) (5-3) Find each difference. Reduce if needed.

a)  $\frac{2}{3} - \frac{9}{15}$

Handwritten work for (a):

- $\frac{2}{3} = \frac{10}{15}$  (multiplied by 5)
- $\frac{10}{15} - \frac{9}{15} = \frac{1}{15}$  (boxed)
- $\frac{1}{3} = \frac{2}{6}$  (multiplied by 2)

b)  $8\frac{1}{3} - 3\frac{5}{6}$

Handwritten work for (b):

- $8\frac{1}{3} = 7\frac{2}{6} + \frac{6}{6}$
- $7\frac{2}{6} + \frac{6}{6} - 3\frac{5}{6} = 4\frac{3}{6} = 4\frac{1}{2}$  (boxed)
- Alternative work:  $8\frac{1}{3} - 3\frac{5}{6} = 4\frac{1}{2}$  (boxed)

5.) (5 pts each, 10 pts total) (5-3) Find each sum. Write as either an improper fraction or mixed number. Reduce if needed.

a)  $\frac{5}{6} + \frac{4}{9}$

Handwritten work for (a):

- $\frac{5}{6} = \frac{15}{18}$  (multiplied by 3)
- $\frac{4}{9} = \frac{8}{18}$  (multiplied by 2)
- $\frac{15}{18} + \frac{8}{18} = \frac{23}{18}$  (boxed)
- or  $1\frac{5}{18}$  (boxed)

b)  $7\frac{5}{12} + 2\frac{7}{16}$

6.) (5 pts each, 10 pts total) (5-4) Find the product.

a)  $4\frac{1}{3} \times \frac{9}{2}$

$4\frac{1}{3} = \frac{(4 \times 3) + 1}{3} = \frac{13}{3}$

$\frac{13}{3} \times \frac{9}{2} = \frac{39}{2}$

b)  $\frac{4}{7} \times \frac{14}{16}$

7.) (5 pts each, 10 pts total) (5-4) Find the quotient.

a)  $5\frac{1}{4} \div \frac{7}{8}$

Keep! Change! Flip!

$5\frac{1}{4} = \frac{(5 \times 4) + 1}{4} = \frac{21}{4}$

$\frac{21}{4} \div \frac{7}{8} = \frac{21}{4} \times \frac{8}{7}$

$\frac{21}{4} \times \frac{8}{7} = \frac{21}{1} \times \frac{2}{7}$

$\frac{21}{1} \times \frac{2}{7} = \frac{42}{7} = 6$

b)  $\frac{11}{12} \div \frac{2}{3}$

8.) (5 pts each, 15 points total) (5-7) Solve each equation.

a)  $x + \frac{3}{4} = \frac{7}{12}$        $x = \frac{7}{12} - \frac{3}{4}$        $\frac{3}{4} = \frac{9}{12}$

$-\frac{3}{4}$      $-\frac{3}{4}$

$\frac{7}{12} - \frac{9}{12} = \frac{-2}{12} \stackrel{\div 2}{=} \frac{-1}{6}$

b)  $y - \frac{1}{7} = \frac{3}{5}$

c)  $z - 5\frac{1}{2} = 6\frac{7}{10}$

9.) (5 pts each, 10 points total) (5-8) Solve each equation.

a)  $\frac{3}{8}(\frac{-8}{3}x) = (2\frac{4}{6})(-\frac{3}{8})$        $2\frac{4}{6} = \frac{(2*6)+4}{6} = \frac{16}{6}$

$x = (2\frac{4}{6})(-\frac{3}{8})$

$x = (\frac{16}{6})(-\frac{3}{8})$        $(\frac{2}{6})(-\frac{3}{1})$

$(\frac{2}{2}) * \frac{1}{-1}$

b)  $7\frac{9}{13}x = \frac{1}{8}$

$\frac{1}{1} * \frac{1}{-1} = \frac{1}{-1}$        $(-1)$

10.) (5 pts each, 10 points total) (5-9) Simplify each expression.

a)  $\left(\frac{a^3b^5}{c^2}\right)^3$

b)  $\left(\frac{x^4y^6}{2z^2}\right)^4$