TH-PA Pre-Algebra Week 27 4/11

1.) $(3a^2b^5)^4$

$3^4 a^8 b^{20}$

2.) $\left(\frac{4x^5y^7}{3z^4}\right)^3$

$\frac{4^3 x^{15} y^{21}}{3^3 z^{12}}$

Pre-Algebra Chapter 5 Pre-Test

No decimals!

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 $\frac{4}{6}$

< less
> greatr

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

#1 $\frac{23}{36} = \frac{23}{36}$

$\frac{4}{6} = \frac{24}{36}$ (*6)

#2 $\frac{23}{36}$? $\frac{4}{6}$

23*6 = 138

36*4 = 144

<

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

Business Decision

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

0.63333...

1.) Get version where decimal is after the first repeat

2.) Get version where decimal is before the first repeat

3.) Subtract 4.) Solve for n.

Moved twice

Moved once

$n = 0.63333...$

$100n = 63.333...$

$-10n = 6.333...$

$90n = 57$

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

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

$\frac{63}{99} = 0.636363...$

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

a) Write 0.65 as a fraction.

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

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

Calculator only for steps

$3 \div 8 =$

$= 0.375$

$.375$

$8 \overline{)3.000}$

-24

60

-56

40

-40

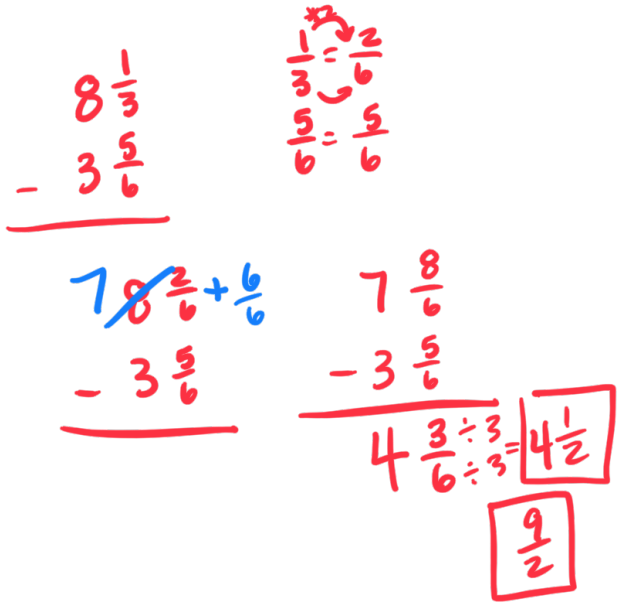
0

0.375

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

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

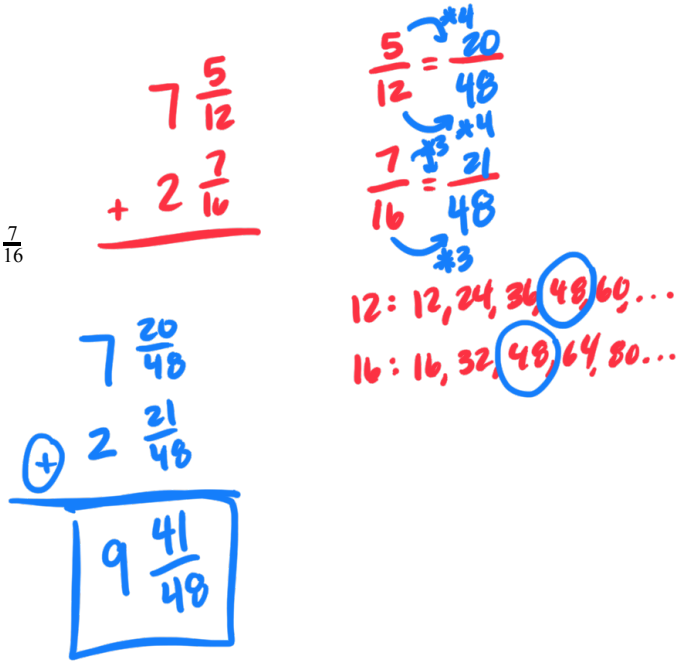
b) $8\frac{1}{3} - 3\frac{5}{6}$



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

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



* and ÷ → No need for common denominator

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

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

1st convert $4\frac{1}{3}$ [mixed number] into an improper fraction.

$4\frac{1}{3} = \frac{(4*3)+1}{3}$ $\quad \frac{12+1}{3} = \frac{13}{3}$

$4\frac{1}{3} * \frac{9}{2}$

$\frac{13}{3} * \frac{9}{2}$ (÷3)

$\frac{13}{1} * \frac{3}{2} = \frac{39}{2}$

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

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

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

$5\frac{1}{4} = \frac{(5*4)+1}{4} = \frac{20+1}{4} = \frac{21}{4}$

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

Keep! change! Flip!

$\frac{21}{4} * \frac{8}{7}$ (÷4) $\quad \frac{21}{1} * \frac{2}{7}$ (÷7) $\quad \frac{3}{1} * \frac{2}{1} = \frac{6}{1} = 6$

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

1.) Algebra sol. 2.) Computation sol.

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

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

$-\frac{3}{4} \quad -\frac{3}{4}$

$X = \frac{7}{12} - \frac{3}{4}$

$\frac{7}{12} = \frac{7}{12}$

$\frac{3}{4} = \frac{9}{12}$ (*3)

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

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

$2\frac{4}{6} = \frac{(2*6)+4}{6} = \frac{12+4}{6} = \frac{16}{6}$

$-\frac{3}{8}\left(-\frac{8}{3}x\right) = \left(\frac{16}{6}\right)\left(-\frac{3}{8}\right)$

$X = \frac{16}{6} * \frac{-3}{8}$ (÷3)

$\frac{16}{2} \quad \frac{-1}{8}$ (÷8)

$\frac{2}{2} \quad \frac{-1}{1}$ (÷2)

$\frac{1}{1} * \frac{-1}{1} = \frac{-1}{1} = \boxed{-1}$

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

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

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

b) $\left(\frac{x^4y^6}{2z^2}\right)^4 = \frac{x^{16}y^{24}}{2^4z^8}$