

S-PA Pre-Algebra Session 20 8/8

$$1.) \frac{16}{39} = x + \frac{1}{3}$$

$$-\frac{1}{3} \quad -\frac{1}{3}$$

$$x = \frac{16}{39} - \frac{1}{3} \neq \frac{15}{39}$$

$$\frac{16}{39} = \frac{16}{39}$$

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

$$\frac{16}{39} - \frac{13}{39} = \frac{3}{39}$$

$$\frac{3 \div 3}{39 \div 3} = \boxed{\frac{1}{13}}$$

$$2.) 3\frac{1}{4} = x - \frac{3}{8}$$

$$+\frac{3}{8} \quad +\frac{3}{8}$$

$$x = 3\frac{1}{4} + \frac{3}{8}$$

$$3\frac{1}{4}$$

$$+\frac{3}{8}$$

$$3\frac{2}{8}$$

$$+\frac{3}{8}$$

$$\boxed{3\frac{5}{8}}$$

$$\frac{1}{4} = \frac{2}{8}$$

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

$$1.) \frac{2}{3} = x + \frac{7}{8}$$

$$-\frac{7}{8} \quad -\frac{7}{8}$$

$$x = \frac{2}{3} - \frac{7}{8}$$

$$\frac{2}{3} = \frac{16}{24}$$

$$\frac{7}{8} = \frac{21}{24}$$

$$\frac{16}{24} - \frac{21}{24} = \boxed{\frac{-5}{24}}$$

$$2.) -2\frac{3}{4} = x - 4\frac{1}{2}$$

$$+4\frac{1}{2} \quad +4\frac{1}{2}$$

$$x = 4\frac{1}{2} - 2\frac{3}{4}$$

$$4\frac{1}{2}$$

$$- 2\frac{3}{4}$$

$$3\frac{2}{4} + \frac{4}{4}$$

$$- 2\frac{3}{4}$$

$$\boxed{1\frac{3}{4}}$$

$$\frac{1}{2} = \frac{2}{4}$$

$$\frac{3}{4} = \frac{3}{4}$$

$$3\frac{6}{4}$$

$$- 2\frac{3}{4}$$

$$\boxed{1\frac{3}{4}}$$

$$\frac{3}{2} \left(2 \frac{5}{9} \right) = \left(\frac{2}{3} X \right) \frac{3}{2}$$

Multiply by
the inverse!

$$X = \left(\frac{3}{2} \right) \left(2 \frac{5}{9} \right)$$

$$2 \frac{5}{9} = \frac{(2*9)+5}{9} = \frac{18+5}{9} = \frac{23}{9}$$

$$X = \left(\frac{3}{2} \right) \left(\frac{23}{9} \right)$$

$$\left(\frac{1}{2} \right) \left(\frac{23}{3} \right) = \boxed{\frac{23}{6}}$$

$$1) \frac{6}{7} X = \frac{-4}{21} \div \frac{6}{7}$$

$$2) \frac{4}{3} \left(\frac{3}{4} X \right) = \left(2 \frac{8}{9} \right) \frac{4}{3}$$

$$X = 2 \frac{8}{9} * \frac{4}{3}$$

$$X = \frac{-4}{21} \div \frac{6}{7}$$

KCF

$$2 \frac{8}{9} = \frac{(2*9)+8}{9} = \frac{26}{9}$$

$$\frac{-4}{21} * \frac{7}{6}$$

$$\frac{-2}{3} * \frac{1}{3} = \boxed{\frac{-2}{9}}$$

$$X = \frac{26}{9} * \frac{4}{3} = \boxed{\frac{104}{27}}$$

$$\frac{1}{6} \left(\frac{6}{7} X \right) = \left(\frac{-4}{21} \right) \frac{1}{6}$$

$$1.) \frac{3}{2} \left(\frac{2}{3} X \right) = \left(\frac{4}{7} \right)^{\frac{3}{2}}$$

$$2.) \frac{9}{2} \left(\frac{2}{9} X \right) = \left(\frac{3}{7} \right)^{\frac{9}{2}}$$

$$3.) \frac{7}{2} \left(\frac{2}{7} X \right) = \left(\frac{5}{8} \right)^{\frac{7}{2}}$$

$$4.) \frac{5}{1} \left(\frac{1}{5} X \right) = \left(\frac{11}{10} \right)^{\frac{5}{1}}$$

$$5.) \frac{12}{9} \left(\frac{9}{12} X \right) = \left(\frac{1}{3} \right)^{\frac{12}{9}}$$

$$6.) \frac{8}{7} \left(\frac{7}{8} X \right) = \left(\frac{2}{3} \right)^{\frac{8}{7}}$$

$$7.) \frac{5}{2} \left(\frac{2}{5} X \right) = \left(\frac{8}{11} \right)^{\frac{5}{2}}$$

$$8.) \frac{3}{4} \left(\frac{4}{3} X \right) = \left(\frac{9}{8} \right)^{\frac{3}{4}}$$

$$2^3 = 2 \cdot 2 \cdot 2 = 8$$

$$(ab^2)^3$$

$$(ab^2)^3 =$$

$$a^1 b^{\textcircled{2}} * a^1 b^{\textcircled{2}} * a^1 b^{\textcircled{2}} = a^{1+1+1} b^{\textcircled{2}+\textcircled{2}+\textcircled{2}}$$

$$a^3 b^6$$

$$(a^1 b^2)^3$$

$$= \boxed{\begin{array}{c|c} 3 & 6 \\ \hline a & b \end{array}}$$

$$(4^1 x^1 y^3)^3$$

$$4^3 x^3 y^9 = \boxed{64 x^3 y^9}$$

$$4^3 = 4 \cdot 4 \cdot 4 = 64$$

$$\left(\frac{a^3}{2b^4} \right)^5$$

$$= \frac{a^{15}}{2^5 b^{20}} = \boxed{\frac{a^{15}}{32 b^{20}}}$$

$$2^5 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 32$$

$$1.) (5mp^2)^2$$

$5^{1 \cdot 2} \quad m^{1 \cdot 2} \quad p^{2 \cdot 2} = 5^2 m^2 p^4$

$$25m^2p^4$$

$$3.) (m^4n^3)^2$$

$m^{4 \cdot 2} \quad n^{3 \cdot 2}$

$$m^8 n^6$$

$$5.) (2xy^4)^0 = 1$$

$$2.) (6a^3b^4)^3$$

$6^{1 \cdot 3} \quad a^{3 \cdot 3} \quad b^{4 \cdot 3} = 6^3 a^9 b^{12}$

$$4.) \left(\frac{7x^2z^4}{3y} \right)^3 = \frac{7^3 x^6 z^{12}}{3^3 y^3}$$

$$6.) \left(\frac{8ab^6}{c^5} \right)^3 = \frac{8^3 a^3 b^{18}}{c^{15}}$$

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 $\frac{4}{6}$ $138 \frac{23}{36} < \frac{4}{6} 144$

$<$

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

Bonus

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

0.63333...

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.

0.375

$\frac{3}{8} \rightarrow 8 \overline{) 3}$
 0.375
 $8 \overline{) 3.000}$
 $-24 \downarrow$
 60
 $-56 \downarrow$
 40
 -40
 0