TH-PA Pre-Algebra Week 26 4/4

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

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

$X = \frac{16}{39} - \frac{1}{3}$ must have a common denominator

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

$\frac{1}{3} \xrightarrow{*13} \frac{13}{39}$

$\frac{16}{39} - \frac{13}{39} = \frac{3}{39} \xrightarrow{\div 3} \frac{1}{13}$

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

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

$3\frac{1}{4} \rightarrow \frac{1}{4} \xrightarrow{*2} \frac{2}{8}$

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

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

$X = 3\frac{2}{8} + \frac{3}{8} = \boxed{3\frac{5}{8}}$

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

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

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

$\left[\frac{16}{24} - \frac{21}{24}\right] = \boxed{\frac{-5}{24}}$

$\frac{2}{3} \overset{*8}{=} \frac{16}{24}$ ($*8$)

$\frac{7}{8} \overset{*3}{=} \frac{21}{24}$ ($*3$)

3: 3, 6, 9, 12, 15, 18, 21, **24**, 27, . . .

8: 8, 16, **24**, 32, 40, 48, ...

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

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

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

$4\frac{1}{2}$

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

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

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

$\frac{1}{2} \overset{*2}{=} \frac{2}{4}$ ($*2$)

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

$3\frac{6}{4}$

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

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

$2\frac{5}{9} = \frac{2}{3}X$

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

multiply by the inverse!

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

$X = 2\frac{5}{9} \div \frac{2}{3}$

$\downarrow$

$\frac{23}{9} \div \frac{2}{3}$

Keep, change, Flip!

$\frac{23}{9} * \frac{3}{2}$ (÷3 on 3 and 9)

$\frac{23}{3} * \frac{1}{2} = \boxed{\frac{23}{6}}$

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

$\frac{18+5}{9}$

$\frac{23}{9}$

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

$X = \frac{-4}{21} * \frac{7}{6}$ (÷7 on 7 and 21)

$\frac{-4}{3} * \frac{1}{6}$ (÷2 on -4 and 6)

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

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

$2\frac{8}{9} = \frac{(2*9)+8}{9} = \frac{18+8}{9}$

$\frac{26}{9}$

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

$\downarrow$

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

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.) $\frac{7}{2}\left(\frac{2}{7}x\right) = \left(\frac{5}{9}\right)\frac{7}{2}$

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

$(a^1b^2)^3 = a^1b^2 * a^1b^2 * a^1b^2 = a^{1+1+1} = a^3$

$= b^{2+2+2} = b^6$

$= a^3b^6$

a^3b^6

$(4^1x^1y^3)^3 = 4^3x^3y^9$

$64x^3y^9$

$\left(\frac{a^3}{2^1b^4}\right)^5$

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

1.) $(5mp)^2$

$5^2 m^2 p^4$

$25m^2p^4$

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

$\frac{7^3x^3z^{12}}{3^3y^3}$

3.) $(2xy^4)^0 = 1$

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

$6^3a^9b^{12}$

5.) $\left(\frac{m^4}{n^3}\right)^2$

m^8n^6

6.) $\left(\frac{8ab^6}{c^5}\right)^3$

$\frac{8^3a^3b^{18}}{c^{15}}$