TH-PA Pre-Algebra Week 23 3/13

1.) $0.55555\ldots = 0.\overline{5} = \frac{5}{9}$

2.) $0.787878\ldots = 0.\overline{78} = \frac{78}{99}$

$\frac{78 \div 3}{99 \div 3} = \boxed{\frac{26}{33}}$

3.) $0.3333\ldots = \frac{3 \div 3}{9 \div 3} = \boxed{\frac{1}{3}}$

4.) $0.423423423\ldots = \frac{423}{999}$

$\frac{423 \div 9}{999 \div 9} = \boxed{\frac{47}{111}}$

$0.823333\ldots = 0.82\overline{3}$

$n = 0.823333\ldots$

1 2 3

$1000n = 823.3333\ldots$

$-\ 100n = 82.3333\ldots$

$900n = 741$

$\frac{900n}{900} = \frac{741}{900}$

$n = \frac{741 \div 3}{900 \div 3} = \boxed{\frac{247}{300}}$

1.) Find the first digit in the repeat.

2.) Place decimal after the first repeat

3.) Place decimal before the first repeat

0.8233333

2

4.) Subtract and solve

$0.8\overline{3} = 0.83333\ldots$

$n = 0.83333\ldots$

$100n = 83.\cancel{333}\ldots$

$-\ 10n = 8.\cancel{3333}\ldots$

$90n = 75$

$\frac{90n}{90} = \frac{75}{90}$

$n = \frac{75 \div 5}{90 \div 5} = \frac{15 \div 3}{18 \div 3} = \boxed{\frac{5}{6}}$

1.) Find the first digit in the repeat.

2.) Place decimal after the first repeat

3.) Place decimal before the first repeat

4.) Subtract and solve

$4\frac{3}{7} + 2\frac{11}{14}$

Must find a common denominator

$\frac{3}{7} = \frac{6}{14}$ *2 *2

$\frac{11}{14} = \frac{11}{14}$

$4\frac{6}{14} + 2\frac{11}{14}$

6

$\frac{6}{14} + \frac{11}{14} = \frac{17}{14}$

$6\frac{17}{14}$ cannot have an improper fraction in a mixed number

$= 8\frac{17}{14}$

$14\overline{)17}$ = 1, -14, remainder 3 $= 1\frac{3}{14}$

$6\frac{17}{14} = 6 + 1\frac{3}{14} = \boxed{7\frac{3}{14}}$

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

$3\frac{5}{8} \quad 2\,\cancel{3}\,\frac{15}{24} + \frac{24}{24}$

$-\,1\frac{5}{6} \quad -\,1\frac{20}{24}$

$2\frac{39}{24}$

$-\,1\frac{20}{24}$

$\boxed{1\frac{19}{24}}$

$\frac{5}{8} = \frac{15}{24}$ (*3)

$\frac{5}{6} = \frac{20}{24}$ (*4)

$\frac{24}{24} = 1$

Common denominator

8: 8, 16, (24), 32, 40, 48, ...

6: 6, 12, 18, (24), 30, 36, 42, ...

Multiplying Fractions → No need to find a common denominator

$\frac{7}{9} * \frac{3}{7} = \frac{21}{63} \div 3 = \frac{7}{21} \div 7 = \boxed{\frac{1}{3}}$

$\frac{7}{9} * \frac{3}{7}$ (÷3, ÷3)

$\frac{7}{3} * \frac{1}{7} = \frac{1}{3} * \frac{1}{1} = \boxed{\frac{1}{3}}$ (÷7, ÷7)

$\frac{9}{20} * \frac{4}{15}$ (÷4 on 4, ÷4 on 20) $\frac{9}{5} * \frac{1}{15} = \frac{3}{5} * \frac{1}{5} = \boxed{\frac{3}{25}}$ (÷3 on 9, ÷3 on 15)

$\frac{9}{20} * \frac{4}{15} = \frac{36 \div 12}{300 \div 12} = \boxed{\frac{3}{25}}$

Multiply Mixed Numbers

$5\frac{1}{7} * 4\frac{2}{3}$

Must convert each mixed number into an improper fraction.

$$\boxed{5}\,\frac{\boxed{1}}{\boxed{7}} = \frac{(\text{whole number}) * (\text{denominator}) + \text{numerator}}{\text{denominator}}$$

$$5\frac{1}{7} = \frac{(5)(7)+1}{7} = \frac{35+1}{7} = \frac{36}{7}$$

$$4\frac{2}{3} = \frac{(4)(3)+2}{3} = \frac{12+2}{3} = \frac{14}{3}$$

$5\frac{1}{7} * 4\frac{2}{3}$

$\frac{36}{7} * \frac{14}{3}$ (÷3 on 36, ÷7 on 14, ÷3 on 3) $\frac{12}{1} * \frac{2}{1} = \frac{24}{1} = \boxed{24}$

Dividing Fractions

Keep, change, Flip!

$\frac{3}{8} \div \frac{9}{16}$

keep change flip!

$\frac{3}{8} * \frac{16}{9}$

$\frac{9}{16}$

$\frac{3}{8} * \frac{16}{9} = \frac{1}{1} * \frac{2}{3} = \boxed{\frac{2}{3}}$

(4 pt)

$\frac{3}{8} * \frac{16}{9} = \frac{48}{72}$ (3.5 pts) $\rightarrow \boxed{\frac{2}{3}}$ 4 pts

$\frac{2}{3} \div \frac{4}{9}$

Keep change Flip

Inverse

$\frac{4}{9} \rightarrow \frac{9}{4}$

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

or $\boxed{1\frac{1}{2}}$

$$6\frac{1}{8} \div \frac{7}{3}$$

1.) Convert mixed number into an improper fraction

$$6\frac{1}{8} = \frac{(6)(8)+1}{8} = \frac{49}{8}$$

2.) Keep, Change, Flip

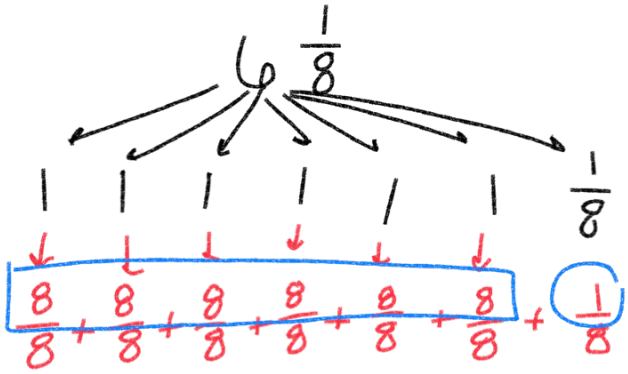
3.) Reduce

4.) Multiply

$$\frac{49}{8} \div \frac{7}{3}$$

$\div 7$ $\quad$ $\div 7$

$$\frac{49}{8} * \frac{3}{1} = \frac{21}{8}$$



$$\frac{(6)(8)+1}{8}$$