Feb.15th, 2016

Unit 2 Day 1
2-1 Converting Rationals

Integers are whole #s that can be +, −, or 0.
ex. −5, 0, 17, 8312

Together, integers and fractions form the set of **Rational #s.**

Rationals

- **Decimals**
  - **Terminating** ex. 0.5, 3.72
  - **Repeating** $0.\overline{3}$, $1.\overline{27}$
- **Fraction** $\frac{1}{2}$, $\frac{1}{3}$, $-\frac{3}{7}$, $1\frac{5}{8}$

Every rational # can be written as either a decimal or a fraction. ex. $0.5=\frac{1}{2}$, $0.\overline{3}=\frac{1}{3}$

Decimals have implied denominators. ex. $0.25=\frac{25}{100}=\frac{1}{4}$

Complete the following

1) $\frac{1}{8}=\frac{5}{40}$ 2) $\frac{2}{5}=\frac{16}{40}$ 3) $\frac{3}{4}=\frac{18}{24}$

4) $\frac{8}{13}=\frac{24}{39}$ 5) $\frac{9}{11}=\frac{54}{66}$ 6) $\frac{7}{12}=\frac{35}{60}$

Reduce

7) $\frac{9}{12}=\frac{3}{4}$ 8) $\frac{27}{6}=\frac{9}{2}$ 9) $\frac{13}{52}=\frac{1}{4}$

Decimals to Memorize!

10) $\frac{1}{2} = 0.5$

11) $\frac{1}{3} = 0.\overline{3}$

12) $\frac{2}{3} = 0.\overline{6}$

13) $\frac{1}{4} = 0.25$

14) $\frac{3}{4} = 0.75$

15) $\frac{1}{5} = 0.2$

16) $\frac{2}{5} = 0.4$

17) $\frac{3}{5} = 0.6$

18) $\frac{4}{5} = 0.8$

19) $\frac{1}{8} = 0.125$ ($\frac{1}{2}$ of $\frac{1}{4}$)

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

21) $\frac{5}{8} = 0.625$ ($\frac{1}{2} + \frac{1}{8} = 0.5 + 0.125$)

22) $\frac{7}{8} = 0.875$ ($0.5 + 0.375$!)

Convert the following to Fractions

23) $0.15 = \frac{15}{100} = \frac{3}{20}$

24) $0.625 = \frac{5}{8}$

25) $1.25 = 1\frac{1}{4} = \frac{5}{4}$

26) $3.125 = 3\frac{1}{8} = \frac{25}{8}$

27) $0.\overline{6} = \frac{2}{3}$

28) $1.\overline{3} = 1\frac{1}{3} = \frac{4}{3}$

Rule of 9: For repeating decimals. The denominator has as many 9's as repeating digits

ex. $0.\overline{5} = \frac{5}{9}$ $0.\overline{3} = \frac{3}{9} = \frac{1}{3}$

$0.\overline{12} = \frac{12}{99}$

$= \frac{4}{33}$

29) $0.\overline{8} = \frac{8}{9}$

30) $0.\overline{27} = \frac{27}{99}$

$= \frac{3}{11}$

31) $0.0\overline{18}$

$= \frac{18}{999}$

$= \frac{2}{111}$

32) $3.\overline{7}$

$= 3\frac{7}{9}$

$= \frac{34}{9}$

33) $2.\overline{06}$

$= 2\frac{6}{99}$

$= 2\frac{2}{33}$

$= \frac{68}{33}$

Practice 2-1 odds