

Unit 0: Review – Integers & Rationals [NO CALCULATORS]**0.3 Rationals: Equivalents, Reducing, Forms**

Rational: Any number that can be written as a fraction

Ex. $\frac{3}{16}$, $5 = \frac{5}{1}$, $\frac{0.25}{1} = \frac{1}{4}$, $0.\overline{3} = \frac{3}{9} = \frac{1}{3}$

Equivalent Fractions – say the same thing

Ex. $\frac{1}{2} = \frac{2}{4}$ $\frac{4}{3} = \frac{8}{6}$

* multiply numerator & denominator by the same value

$\frac{2}{4} = \frac{3}{6}$

$\frac{3}{6} = \frac{4}{8}$

$\frac{4}{8} = \frac{5}{10}$

$\frac{5}{10} = \frac{500}{1000}$

$\frac{8}{6} = \frac{12}{9}$

$\frac{12}{9} = \frac{16}{12}$

Reducing Fractions (lowest terms/simplest form) – equivalent fraction with no common factor (aside from 1)

Ex. $\frac{9}{15} \div 3 = \frac{3}{5}$

$\frac{20}{16} \div 4 = \frac{5}{4}$

OR $\frac{20}{16} \div 2 = \frac{10}{8} \div 2 = \frac{5}{4}$

* $\div$ by BCF

Fraction Forms – for fractions greater than 1

1. improper

numerator greater than denominator

2. mixed number

whole number & proper fraction

Ex. Convert to mixed number

a) $\frac{11}{3} = 3\frac{2}{3}$

← remainder

← same

↑ quotient

$11 \div 3 = 3 \text{ R} 2$

b) $\frac{11}{2} = 5\frac{1}{2}$

c) $\frac{14}{3} = 4\frac{2}{3}$

Ex. Convert to improper

a) $5\frac{3}{5} = \frac{5 \cdot 5 + 3}{5}$

$= \frac{28}{5}$

b) $7\frac{1}{2} = \frac{7 \cdot 2 + 1}{2}$

$= \frac{15}{2}$

c) $2\frac{2}{3} = \frac{2 \cdot 3 + 2}{3}$

$= \frac{8}{3}$

Comparing/Ordering Fractions – *need common denominator*

Ex. Place the correct sign (<, >, or =) between each pair of fractions:

a) $\frac{2}{3} > \frac{1}{2}$

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

"greater"
than

b) $\frac{1}{3} < \frac{2}{5}$

$\frac{5}{15} \uparrow \frac{6}{15}$

"less than"

c) $\frac{12}{16} = \frac{15}{20}$

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