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Unit 1: Review – Integers & Rationals [NO CALCULATORS]

1.3 Rationals: Equivalents, Reducing, Forms

Rational: Any number that can be written as a fraction

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

Equivalent Fractions – Say the same thing

Ex. $\frac{1}{2} = \frac{2}{4}$ $= \frac{3}{6}$ $= \frac{4}{8}$ $= \frac{5}{10}$

* multiply the numerator & denominator by the same value

$\frac{4}{3} = \frac{8}{6} = \frac{12}{9} = \frac{16}{12}$

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

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

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

★ ÷ by GCF

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

Fraction Forms – for fractions greater than 1

1. improper
numerator is 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

$11 \div 3 = 3$ 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) $2\frac{2}{3} = \frac{2 \cdot 3 + 2}{3} = \frac{8}{3}$

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Comparing/Ordering Fractions – need common denominator

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

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

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

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

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

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

$\frac{3}{4} \quad \frac{3}{4}$

Practice 1.3 worksheet