Gr 5-8 Review

Name: _____

Weighted Averages

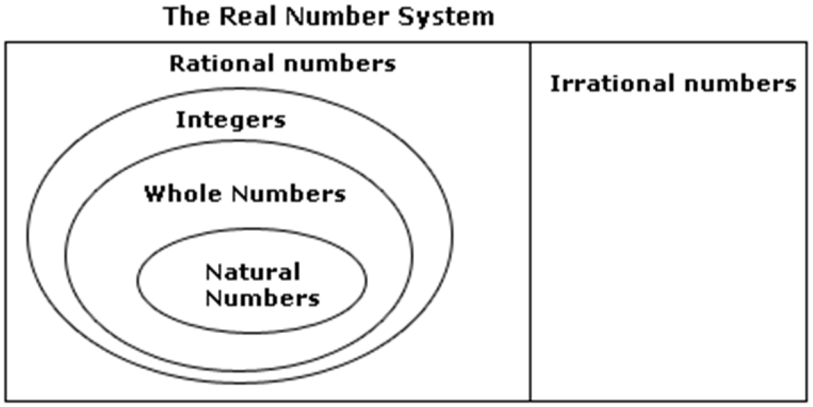
KU 35%	APP 15%	COMM 10%
$\frac{23}{38}$	$\frac{19}{33}$	$\frac{5}{9}$

Exponents

Scientific Notation

Square Roots

Number Sets



Order of Operations

Brackets

Exponents

Divide

Multiply

Add

Subtract

$(-3)(-2)^3$

$17 - 9 \div 3 \times 2$

Grouping

Exponents

Multiply

Add

Symbols and Words

$\neq$	not equal to	∞	infinity
$\sqrt{}$	square root	$\|\|$	parallel to
$\in$	element of	$\perp$	perpendicular to
$\cong$	congruent to	^{o}	degree for angles
$\sim$	similar to	%	percent

Prime numbers

Composite numbers

$(6 - 9) - (8 - (-5))$

$\frac{1}{4}\left(\frac{6}{10} - \frac{1}{5}\right)$

Integers

-13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

We use integers for:

- _____
- _____
- _____
- _____

Sign Rules

(+)(+) = ____ (+)(–) = ____

(–)(–) = ____ (–)(+) = ____

Adding & Subtracting Integers

1. -2 + 7 - 4 - 3 + 1

- Add all of the **positive** numbers together
- Add all of the **negative** numbers together
- Which are there the **most** of, and by how much

2. 10 + 3 - 2 - 9 + 5

Extended Sign Rules

Even # of Negatives = ____

Odd # of Negatives = ____

3. -10 + 4 + 7 - 2 + 8 - 4 + 1

4. 3 - 7 - 12 + 4 + 10 - 8 + 2

Multiplication

Evaluate each of the following:

a) $-2 \times 5 \times 1$ b) $3(-2)(10)(-1)$ c) $-2 \cdot (-5) \cdot (-12)$

Division

Evaluate each of the following:

a) $15 \div -3$ b) $\frac{(-5)(-4)}{10}$ c) $\frac{(-5)(-2)(-3)}{(-6)(-1)}$

Don't Get Confused!

Evaluate each of the following:

a) $\frac{25-9\times 2}{6\div(3\times 2)}$ b) $\frac{5^2-1}{5-(-1)}$ c) $\frac{7+2(3-5)}{-3}$

Cartesian Plane

To describe the location of points on a plane we use the Cartesian Coordinate System.

Definitions:

x-axis – the _____ number line which extends left and right.

y-axis - the _____ number line which extends up and down.

origin - the point _____ where the axes meet

ordered pair - a point of the form _____ located on a Cartesian plane

x-coordinate – the _____ number in an ordered pair describing the _____ position of the point.

y-coordinate - the _____ number in an ordered pair describing the _____ position of the point.

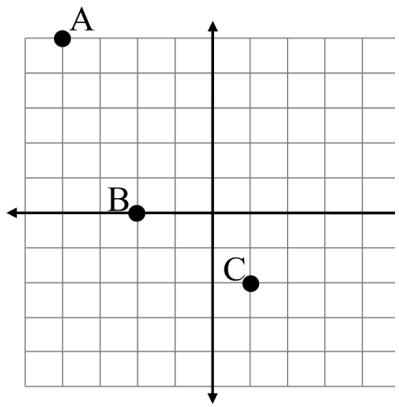
quadrant – the _____ regions created by the _____

Indicate the coordinates of the following points:

A: _____

B: _____

C: _____



Represent the following points on the graph:

D: (5, 1) F: (3, -1)

E: (-2, 4) G: (-4, -2)

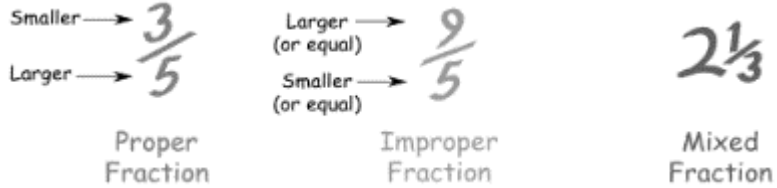
In which of the following quadrants are these points located? Plot the points.

J: (2, -3) _____ K: (-5, 1) _____

Determine the coordinates of **point H**, which has an x-coordinate that is 5 more than **point B** and is located in quadrant 4.

Determine the coordinates of **point I**, which is located on the x-axis and has one of the same coordinates as **point A**.

Fractions



Finding GCF
-Break down into factors
-Choose greatest in common

Finding LCD
-Break down using a common factor
-Multiply by missing factors

Reducing Fractions
-Break down using a common factor
-Cancel

Reciprocals - flip fraction

Negative Signs
- best to place negative in the numerator

Add/Subtract
$1\frac{11}{14} + 8\frac{5}{35}$

-Don't change to improper fractions (numbers may become big)

-Find LCD (see steps above)

-Add/Subtract whole numbers separately from numerators. KEEP the denominator the same

-Reduce

Borrowing if needed
$9\frac{2}{4} - 1\frac{11}{14}$

-Need to borrow if 1st numerator is smaller than the 2nd

-Borrow ONE WHOLE from the whole #

-Use the denominator to rewrite the ONE as a fraction

Note: $\text{ONE} = \frac{2}{2} = \frac{5}{5}$ etc...

Multiply
$2\frac{1}{2} \times 4\frac{4}{5}$

-MUST change to improper fractions

-Multiply $\frac{\text{top} \times \text{top}}{\text{bottom} \times \text{bottom}}$

-Reduce

Cross Cancelling
$\frac{7}{18} \times \frac{14}{21}$

-ONLY do for MULTIPLICATION

-Any top # can reduce with any bottom #

Divide
$2\frac{1}{4} \div 3\frac{3}{5}$

-MUST change to improper fractions

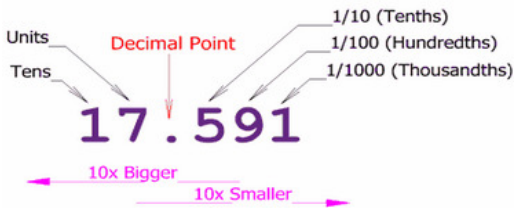
-Instead of dividing by a fraction, multiply by its reciprocal.

ie.-
-Change $\div$ to $\times$
-Flip 2nd fraction

Dealing with whole numbers
$\frac{3}{5} \div 7$

Put ONE under whole #s

Decimals



Comparing decimals

0.402
0.42

0.375
0.2

Rounding

13.54897 to the nearest hundredth

1.81134 to the nearest thousandth.

Convert

0.52

$^{45}/_{47}$

Rate

Comparison of two quantities with DIFFERENT units.
Ex. Speed km/h *Ex. Wage $/hr*

Sarah drove 180 km in 3 hours. How far did she drive in 1 hour?

Jamie bought bananas for $3.65. They weighed 6 lbs. What is the unit rate?

Percent

Convert

60% $^{3}/_{4}$ 0.875

Determine the sale price if a shirt that costs $59.95 is 20% off.

-Find % of a number
-Subtract the discount

If 15% of a number is 30, find the number.

-Create an equation
-Solve

Ratio & Proportion

Comparison of two (or more) quantities with the SAME unit.
Ex. Scale for maps 1:1000

Written as:
Colon Fraction Words

$1:6:x = 3:y:9$

-Convert to fraction format
-Cross multiply two ratios at a time to solve

A radio costs $159.00. Calculate the cost including tax.

-Find tax only
Add to the total

You earn $150 each week plus 6% commission on your sales

If x is the amount of your sales, write an equation for your earnings

Gr 5-8 Review

Name: _____

Evaluate

$if\ x = -2, y = 3, z = -1$

$Find\ \frac{x^2+2xy+z^2}{x+z}$

-Replace each variable with the given number

-Brackets are important if
there's multiplication
there's an exponent
there's multiple terms inside a fraction

Translate

+	-	×	÷	=
• add • plus • sum • increased by • in addition to • greater than • added to	• subtract • minus • difference • decreased by • subtracted from • less than • diminished by • take away	• multiply • times • product • of • multiplied by • doubled (× 2) • tripled (× 3) • power (× itself)	• divide • divided by • per • quotient • divident / divisor	• equals • the same as • equal to • as much as • the result • the answer • is • the solution

Three less than the product of five and a number is twenty-seven.

Bob has $5 more in his pocket than Kate. Together they have $45.

Solve

$x - 2 = 4$

-Undo operations
-Do the same operation to BOTH sides of =

$5x = 20$

$3x - 2 = 4$

-Undo weaker operations 1st, ie. undo in SAMDEB order

$12 = -2 - \frac{x}{3}$

Problem Solving Plan

Givens

Required

Analyze

Solve + check

Solution statement

Strategies

-Draw diagram
-Work backward
-Look for a pattern
(organize in a list)
-Trial & error
-Use an equation
-Solve a similar by simpler problem

Communication Ques

-Describe
-Explain
-Show steps
-Find mistake
-Define
-Compare
-Represent
-Give reasons
-Find a pattern

Representing Solution

Numerically (table)

Algebraically (equation)

Graphically

Diagramatically

Describe with words