

## Review Final Sp. 2011 – To be given Mon., 5/23

Study all your old tests and go over the review sheets

Extra practice by doing the practice tests on my website (only after you've gone over your tests)

## New Material Final Sp. 2011 – To be given Wed., 5/25

### Fractions & Mixed #'s

Add & Subtract                      **Ex. a)**      $217 \frac{1}{36} - 183 \frac{4}{15}$      **b)**      $\frac{8}{15} - \frac{11}{15}$

With & Without LCD's

Find LCD's using prime factors

Building Higher Terms

Reducing as Necessary

Using GCF or Primes factors

Improper to Mixed Numbers as needed

Borrowing & Carrying with Mixed #'s

Multiply & Divide                      **Ex. a)**      $15 \frac{1}{2} \cdot \frac{2}{3}$                       **b)**      $\frac{7}{8} \div \frac{4}{5}$

Mixed #'s MUST be improper fractions

Division is multiplication of dividend by reciprocal of divisor

Convert answers to mixed #'s as needed

Canceling or reducing as needed

Remember divisibility rules from Ch. 1

Convert Fractions to Decimals                      **Ex. Convert to a decimal a)**  $21 \frac{5}{8}$      **b)**  $\frac{27}{50}$

Divide numerator by denominator

**c)**  $\frac{5}{27}$

Proper fractions will not be whole #'s!

Decimal after whole # & add zeros in dividend

Put as many zeros as needed to get terminating decimal or see repeat or round

Never round unless asked

Use bar over repeating # or #'s to see the repeat

Order of Operations PEMDAS                      **Ex. Simplify**      $2\sqrt{\frac{1}{4}} + \frac{5}{8} \div 1 \frac{1}{2} - (\frac{1}{2})^2$

Solve Equations containing fractions                      **Ex. Solve**      $\frac{1}{2}x - 5 = \frac{2}{3} - \frac{1}{8}x$

Simplifying Expressions containing fractions

**Ex. Simplify**      $(\frac{2}{3}x^2 + \frac{1}{2}x - 1) - (\frac{1}{5}x^2 - \frac{3}{4}x + \frac{2}{3})$

Comparison of fractions with < or > or =                      **Ex. Compare**      $\frac{2}{7}$  \_\_\_\_\_  $\frac{3}{5}$

Techniques: Visual (# line, pictures), build higher terms, decimals, trick (cross multiply bottom to top)

### Decimals

Read & Write decimals in words                      **Ex. Write the name for:**     **127.2891**

**Ex. Write the number:**

**two thousand, forty-five and two hundred eighty-seven ten-thousandths**

Rounding a Decimal                      **Ex. Round to the nearest 100<sup>th</sup>:**     **589.89781**

Add & Subtract                      **Ex. a)**      $75.198 + 1057.9$                       **b)**      $8.9 - 2.758$

Line up the decimals (which lines up the place values)

Add zeros, especially in subtraction

Multiply                      **Ex. a)**      $28.5 \times 0.00012$                       **b)**      $(1.2)(0.09)$

Ignore the decimals & multiply #'s

Count total decimals and put into the answer (right to left)

Divide      **Ex. a)  $27 \div 15$       b)  $2.5 \div 50$       c)  $1.025 \div 0.5$**

Whole  $\div$  Whole (recall changing a fraction to a decimal)

Decimal  $\div$  Whole (same as whole by whole)

Whole or Decimal  $\div$  Decimal

Move decimal out of divisor, move same # of places in dividend, place into quotient, don't touch decimal again

Convert Decimal to Fraction      **Ex. Change to a fraction      0.58**

Read place values of decimals

Always lowest terms

Compare decimals with  $<$  or  $>$  or  $=$       **Ex. Compare      2.871 \_\_\_\_\_ 2.971**

# by # comparison – find larger digit find larger number

Place decimals on a number line      **Ex. Draw a number line and place 1.1 correctly**

Solve equations containing decimals      **Ex.  $0.1(x + 0.5) = 1.2 - 0.1x$**

Simplify expressions containing decimals

**Ex.  $(0.1x^2 - 2.52x + 1.1) + (0.1 - 3.5x^2 + 0.4x)$**

Order of operation PEMDAS      **Ex.  $(1.2 + 0.3)^2 \div 0.5 + 0.5$**

### Scientific Notation

Scientific Notation to Standard form (the way we see #'s every day)

**Ex. Put in standard form a)  $2.5 \times 10^4$  b)  $0.025 \times 10^{-2}$**

Understand multiplying by factors of 10 moves decimal to right (positive exponent on 10)

Understand dividing by factors of 10 moves decimals to left

A negative exponent means take the reciprocal of the base

Remember that division is multiplication by a reciprocal

Negative Exponents REPRESENT division in by factors of 10 in scientific notation

Standard form to Scientific Notation      **Ex. Write in Scientific Notation**

**a) 0.00035      b) 78,5832**

Put the decimal where you want it (one # to left of it) & count # of places to get back to where it started

If a BIG # (greater than 1) then exponent will be positive #

If a LITTLE # (between 0 and 1) then the exponent will be negative #

### Percentages

Definition

A part of 100

Convert a Decimal  $\rightarrow$  %      **Ex. Write as a %      0.375**

Move decimal RIGHT 2 times

Convert a %  $\rightarrow$  Decimal      **Ex. Write as a decimal      25%**

Move decimal LEFT 2 times

Convert %  $\rightarrow$  Fraction      **Ex. Write 15% as a fraction**

Definition as a part of 100 and reduce

Fraction to a %      **Ex. Write as a %:**      a)  $\frac{2}{3}$       b)  $\frac{3}{25}$

Build higher term to 100ths if possible      **OR**

Convert fraction to a decimal & decimal to %

## Percentage Problems

**Ex. Write as an algebra problem & solve**

- a) **What is 25% of 15?**
- b) **What number is 15% of 60?**
- c) **15 is what percent of 45?**

### Algebraic Interpretation

\_\_\_\_\_ % of \_\_\_\_\_ is \_\_\_\_\_

Use context clues to fill in blanks

Convert to algebra problem since “of” means multiply and “is” means equals

Solve resulting equation remembering

- 1) Use decimal or fraction for the %
- 2) If finding the % you will get a decimal → convert it to a %

As a proportion  $\frac{\%}{100} = \frac{\text{is}}{\text{of}}$

Solve by finding the cross products and setting equal creating an algebraic equation

No special conversion is needed for % since a part of 100 is being used