



MID-YEAR REVIEW

The Mid-Year Assessment is scheduled for _____ Use this review to help you prepare for this assessment. Study the following vocabulary.

VOCABULARY: Sum, Difference, Product, Quotient, Repeating Decimal, Terminating Decimal, Dividend, Divisor, Power of 10, Numerical Expression, Algebraic Expression, Simplify, Evaluate, Translate, Distributive Property, Coefficient, Constant, Variable, Term, Exponent, Base, Factor, GCF, Unit Cube, Cube, Rectangular Prism, Volume

DIRECTIONS: FIRST FILL IN THE THINK BOXES TO HELP YOU BEGIN THINKING ABOUT EACH PROBLEM. THEN, ANSWER THE FOLLOWING QUESTIONS REFERRING TO YOUR CLASS NOTES, IF NEEDED.

PART 1: DECIMALS

1. Round the following numbers to the given place value.

a) 67.83; tenths

67.8

b) 123.9872; hundredths

123.99

2. Write the following decimals.

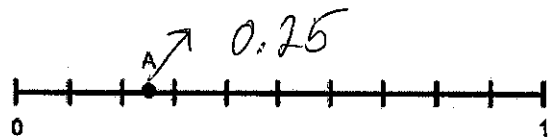
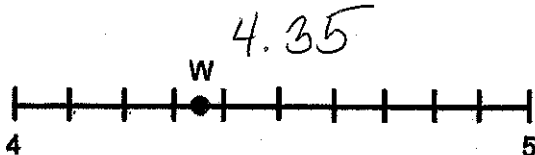
a) eighty-one thousandths

0.081

b) twenty and five hundredths

20.05

3. Label the tick marks. Determine the decimal value of each of the following points.



4. Samantha ordered 61 picture frames for her business. The frames are mailed in boxes that can each hold 7 frames. What is the least number of boxes that can be used to mail Samantha's picture frames?

9 boxes will be needed to mail the frames.

Think Box:

*What is the rule for rounding up?
5 or more raise the score*

*What is the rule for rounding down?
4 or less keep the mess*

*What happens to the digits to the right of the place value you are rounding to?
drop the digits to the right of the place value you are rounding to.*

5. Perform the following operations. Estimate, then find the exact answer. SHOW WORK.

a) $73.56 + 124.2$

Estimate: $70 + 120 = 190$

$$\begin{array}{r} 73.56 \\ + 124.20 \\ \hline 197.76 \end{array}$$

b) $12 - 7.89$

Estimate: $12 - 8 = 4$

4.11

c) 7.4×4.32

Estimate: $7 \times 4 = 28$

31.968

d) $82.03 \div 1.3$

Estimate: $80 \div 1 = 80$

63.1

6. Write $\frac{8}{11}$ as a decimal.

0.72

Think Box:

Remember to line up the decimals when adding and subtracting.

How must you write the number 12 in order to subtract properly?

12.00

What are you actually doing when you move the decimal point in the divisor and the dividend the same amount of places?

Multiplying by a power of 10.

Why do you do this?

To make the divisor a whole number so it is easier to divide.

Think Box:

How do you write a fraction as a decimal?

divide the numerator by the denominator.

PART II: POWERS OF 10

1. Write the following numbers using an exponent.

a) 10,000 $\underline{10^4}$

b) 100 $\underline{10^2}$

2. Write these powers of 10 in standard notation.

a) 10^5 $\underline{100000}$

b) 10^8 $\underline{100000000}$

3. Find the product or quotient,

a) 5.6×1000 $\underline{5600}$

b) $\frac{40}{100}$ $\underline{0.4}$

Think Box:

What is meant by standard notation?

Writing a number

Explain the rule for multiplying by a power of 10.

Move the decimal point to the right the number of zeros in the power of 10.

Explain the rule for dividing by a power of 10.

Move the decimal point to the left the number of zeros in the power of 10.

PART III: DECIMAL APPLICATIONS

1. EVALUATE THE FOLLOWING NUMERICAL EXPRESSIONS USING THE ORDER OF OPERATIONS. USE THE FUNNEL METHOD.

a. $18 - 3(2 + 3) \div 5$

15

b. $3(17 - 14 + 6 \times 2)$

45

c. $(2^5 - 2 \times 10)^2$

144

d. $4(5) + 3^2 - 1$

28

Think Box:

What is the order of operations? (What is different about the MD and the AS?)

Do whichever comes first from left to right

What do you need to do when there is more than one operation inside the parentheses?

Follow the order of operations -

What operation is indicated in the expression $6(3)$?

Multiplication

e $4(8 + 16 \div 4^2)$

36

f. $20 - (10 + 2.67)$

7.33

2. Write an algebraic expression for each word phrase below.

a. The quotient of a five and a number

$5 \div x$ OR $\frac{5}{x}$

b. A number less than two hundred sixty

$260 - x$

c. Half of a number

$\frac{1}{2}n$ OR $\frac{n}{2}$ OR $n \div 2$

d. A number tripled plus a number doubled

$3x + 2y$

e. The sum of a number and sixteen thousandths

$x + 0.016$

f. The difference between a number and two

$x - 2$

g. The product of a number and two-tenths

$0.2x$ OR $\frac{2}{10}x$ OR $\frac{2x}{10}$

h. a number cubed

x^3

i. a number squared

x^2

Think Box:

Does an expression have an equal sign?

No, an EQUATION has an equal sign.

What is important to remember about the notation when writing the product between a number and a variable?

Write the number 1st then the variable and no multiplication symbol between the two

What is important to remember about translating the difference when the words "less than" are given?

work backwards from right to left.

Refer to the KEY WORDS Chart if needed.

3. Translate the following word problems to expressions.

- a. On Martin Luther King Day, Sam went snow boarding. He went down the mountain 14 times, while his older brother went down 18 times that day. Write a numerical expression to represent the different between the two amounts of trips down.

$$18 - 14$$

- b. Scarlett loves to eat blueberries. She once picked 350 blueberries at a farm and divided them up equally into c cartons to give away. Write an expression to represent the amount of blueberries Scarlett puts in each carton.

Define the variable: $c = \# \text{ of cartons}$

Write the Expression: $350 \div c$ or $\frac{350}{c}$

Think Box:

What makes a numerical expression different from an algebraic expression?

Numerical contains numbers

Algebraic contains variables

What does define the variable mean?

State what the variable equals

4. Solve the word problem below. Show all thinking.

There are 95 sixth graders and 110 seventh graders. Mr. Math wants to divide both grades into identical groups of equal size with the greatest possible number of students in each group. How many students should be in each group? How many groups of sixth graders will there be? How many groups of seventh graders.

Show your thinking here
(Birthday cake strategy)

Think Box:

Circle the key words in these problems.

What strategy can you use?

Birthday cake

There are 5 students in each group with 19 groups of sixth graders and 22 groups of seventh graders.

5. A pack of gum costs \$0.95. Use mental math and the distributive property to show the total cost of 5 packs.

It would cost \$4.75

$$5(1 - 0.05)$$

$$5 - 0.25$$

$$4.75$$

Think Box:

How would you multiply 0.95×5 mentally?

change 0.95 to \$1 - 5¢

6. Factor the following expression. Rewrite the following expression as a product using the distributive property and the GCF.

a. $200 + 100$

$$100(2 + 1)$$

7. Use the distributive property to simplify the following expression.

$$9(5 - 4)$$

$$\begin{array}{r} 9.5 - 9.4 \\ 45 - 36 \\ \hline 9 \end{array}$$

PART IV: NUMBER THEORY

1. Use divisibility to determine if the following numbers are divisible by 2, 3, 4, 5, 6, 7, 8, 9 and/or 10.

a) 102

↓
2, 3, 6

b) 567

↓
3, 7, 9

Think Box:

What is the most efficient way to find the GCF of large numbers?

birthday cake

When is it appropriate to use listing factors for finding the GCF?

When the values are smaller.

Do you remember the divisibility rules for 2, 3, 5 and 10?

2 - even number

3 - sum of digits divisible by 3

5 - ends in 0 or 5

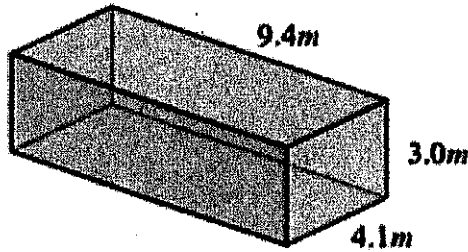
10 - ends in 0.

2. Determine the GCF of 48 and 96.

$$\text{gcf} = 48$$

PART V: VOLUME

1. Find the volume of the prism below.



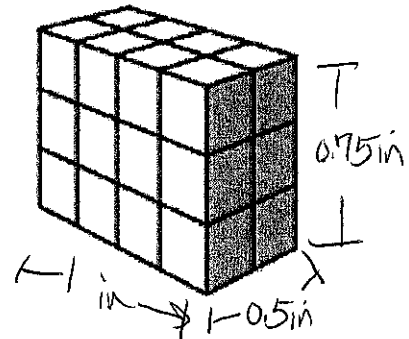
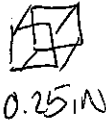
$V = 4.1m \times 3m \times 9.4m$

115.62 m³ is the volume.

2. Find the volume of the rectangular prism below that is made of small cubes with an edge length of 0.25 in.

Hint: Draw a cube with an edge of 0.25 in. below.

$V = 1 \times 0.5 \times 0.75$

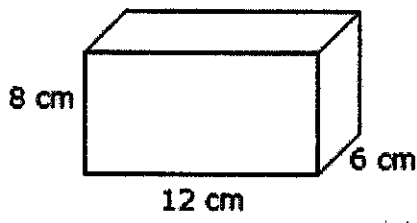


Sentence The volume is 0.375 in³.

3. Small cubes with an edge length of 0.5 cm are packed inside the box shown below. How many cubes fit inside the box when it is completely full?

$l = 12 \div 0.5 = 24$
 $w = 6 \div 0.5 = 12$
 $h = 8 \div 0.5 = 16$

24 x 12 = 288 cubes on base



288 x 16 cubes = 4608 High

THINK BOX

Draw a picture of the small cube with an edge of 0.5 cm.

Sentence There are 4,608 - 0.5cm cubes in the prism.