

# PRE-ALGEBRA

PRACTICE TEST REVIEW  
MATH 7 MR. HERNANDEZ  
JOHN MUIR MIDDLE SCHOOL  
LAUSD

## UNIT II

Jan 8-6:55 PM

# 1. Simplify the following 3 exercises

1.	<input type="text" value="-23"/>	+	<input type="text" value="11"/>	=	<input type="text"/>
2.	<input type="text" value="-20"/>	+	<input type="text" value="45"/>	=	<input type="text"/>
3.	<input type="text" value="-16"/>	+	<input type="text" value="-38"/>	=	<input type="text"/>



<http://www.aaamath.com/grade8.html>

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## Evaluation (1. simplify Adding integers)

1. Did you notice in exercise 1 that you were adding a positive and a negative number?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you notice that the absolute value of 11 was the smaller absolute value in exercise 1.?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. In exercise number two, did you notice that the absolute value 45 was greater than the absolute value of the -20 and that therefore the answer was going to be positive instead of negative?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did you notice in exercise 3 that both numbers had the same direction?

Yes \_\_\_\_\_ No \_\_\_\_\_

5. Did you notice that the answer for exercise 3 was going to be negative?

Yes \_\_\_\_\_ No \_\_\_\_\_

## 2. Simplify:

1.  -  =

2.  -  =

3.  -  =

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## EVALUATION FOR SUBTRACTING INTEGERS (exercise 2)

1. Did you use the "keep change change" rule to simplify exercise number one?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you use the rule for subtracting integers which is "subtract the absolute value of the integers, the answer has the sign of the integer with the greater absolute value for exercise one?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you notice that you can simply multiply the signs in exercise two to get a positive sign and then simply use the rule for adding integers to simplify the problem?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did you notice that in exercise three, the problem simplifies faster if one multiply the two negative signs?

Yes \_\_\_\_\_ No \_\_\_\_\_

### 3.

A repeating decimal, also called a recurring decimal, is a number whose decimal representation eventually becomes periodic (i.e., the same sequence of digits repeats indefinitely). The repeating portion of a **decimal expansion** is conventionally denoted with a **vinculum** so, for example,

$$\frac{1}{3} = 0.3333333 \dots = 0.\overline{3}.$$

The denominators of the first few unit fractions having repeating decimals are 3, 6, 7, 9, 11, 12, 13, 14, 15, 17, 18, 19, 21, 22, 23, 24, 26, 27, 28, 29,

### Try This:

Divide  $1/18$  to see if it is a repeating decimal.

<http://mathworld.wolfram.com/RepeatingDecimal.html>

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## EVALUATION FOR EXERCISE 3 (Repeating Decimals)

1. Did you understand the argument in exercise 3 that a repeating decimal is a number whose decimal representation eventually becomes periodic?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you notice that any repeating decimal is also called a recurring decimal?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Do you agree with the statement "the denominators of the first few unit fractions having repeating decimals are 3, 6, 7, .....?"

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did you found  $1/18$  to be a repeating decimal?

Yes \_\_\_\_\_ No \_\_\_\_\_

## 4. Divide

$$0.8 \overline{)0.424}$$

<http://www.321know.com/dec66rx2.htm>

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## EVALUATION FOR EXERCISE NUMBER FOUR

1. Did you multiply the divisor by 10 before dividing the dividend by the divisor?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you multiply the dividend also by 10 before dividing the dividend by the divisor?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you move the new decimal place up onto the quotient right away?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did you the key statement "how many times go 8 into 4?"

Yes \_\_\_\_\_ No \_\_\_\_\_

5.

**Problem.** We have categorized numbers as **real**, **rational**, **irrational**, and **integer**. Name all the categories to which each of the following belongs.

3 [redacted]

-3 [redacted]

 $-\frac{1}{2}$  [redacted] $\sqrt{3}$  [redacted] $5\frac{3}{4}$  [redacted] $-11\frac{1}{2}$  [redacted]

1.732 [redacted]

6.920920920... [redacted]

6.9205729744... [redacted]

6.9205729744 [redacted]

<http://www.themathpage.com/aPreCalc/rational-irrational-numbers.htm>

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## EVALUATION FOR EXERCISE NUMBER FIVE

1. Did you notice the four categories of numbers including reals, rationals, irrationals, and integers?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you mark reals and irrationals for the square root of 3?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you notice that all the numbers are real numbers?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did notice that there is no imaginary numbers included in the categories?

Yes \_\_\_\_\_ No \_\_\_\_\_

6. Circle each rational numbers.

### Rational Numbers

-8.43	1.2	0	-3	$9/3$	$\sqrt{25}$
12.5	$\sqrt{2}$	4	3	$\sqrt{11}$	$\sqrt{9}$
10.3	-50.4	-4	7	-2	3.14
-5	$1/3$	$-6/3$	-10	15	$\sqrt{36}$
$1/2$	$-1/3$	$-\sqrt{13}$	$-16/4$	6	5
$-1/2$	$8/2$	-7	$-3/4$	-2.03	$3/4$

<http://argyll.epsb.ca/jreed/math9/strand1/1102.htm>  
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## EVALUATION FOR EXERCISE NUMBER SIX

1. Did you have any difficulty identifying rational numbers?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you notice that only the square roots of perfect squares are rational and that the square root of 11 for example which is not the square root of a perfect square number is irrational?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you notice that the number zero is a rational number because it can be written as a fraction with the exception of division by zero which still does not contradict the definition of rational numbers?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did you notice that 7 is a rational number because seven can be written as the fraction  $7/1$ .

Yes \_\_\_\_\_ No \_\_\_\_\_

7. Simplify each of the following:

a)  $|6| =$      b)  $|-6| =$      c)  $|0| =$      d)  $|2 - 7| =$

e)  $|8| + |-4| =$      f)  $|-3| - |-2| =$

g)  $1 - |-1| =$      h)  $-8 + |-7| =$

i)  $\frac{-4}{|-4|} =$      j)  $(-4)|-4| =$

<http://www.themathpage.com/Alg/absolute-value.htm>

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Evaluation for exercise number seven?

## 8. State yes or no

## Part 1

Determine whether or not the number is written in scientific notation.

1)  $4.37 \times 10^5$

- A) Yes  
 B) No

Determine whether or not the number is written in scientific notation.

2) 2,380,000

- A) No  
 B) Yes

Determine whether or not the number is written in scientific notation.

3)  $20.04 \times 10^3$

- A) Yes  
 B) No

<http://www.mccc.edu/~kelld/scientific/scientific.htm>  
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# EVALUATION FOR 8 PART 1

1. Did you notice that in exercise one, 4.3 is greater than 1 but less than 10?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you notice that exercise 2 is written in standard notation?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you notice that in exercise 3 the number is not in scientific notation because 20 is greater than 10?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did you know that in order for a number to be written in scientific notation the first factor must be greater than one but less than ten?

Yes \_\_\_\_\_ No \_\_\_\_\_

8.

Part 2

Express the number in scientific notation.

4) 4,737

- A)  $4.737 \times 10^4$
- B)  $4.737 \times 10^3$
- C)  $4.737 \times 10^{-3}$
- D)  $4.737 \times 10^1$

<http://www.mccc.edu/~kelld/scientific/scientific.htm>

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# EVALUATION FOR 8 PART 2

1. Did you notice that the first factor in all of the answers was greater than one and less than 10?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you notice that the right answer was to have in its second factor an exponent equal to 3?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you notice that you could have eliminated choices A, C and D before choosing B?

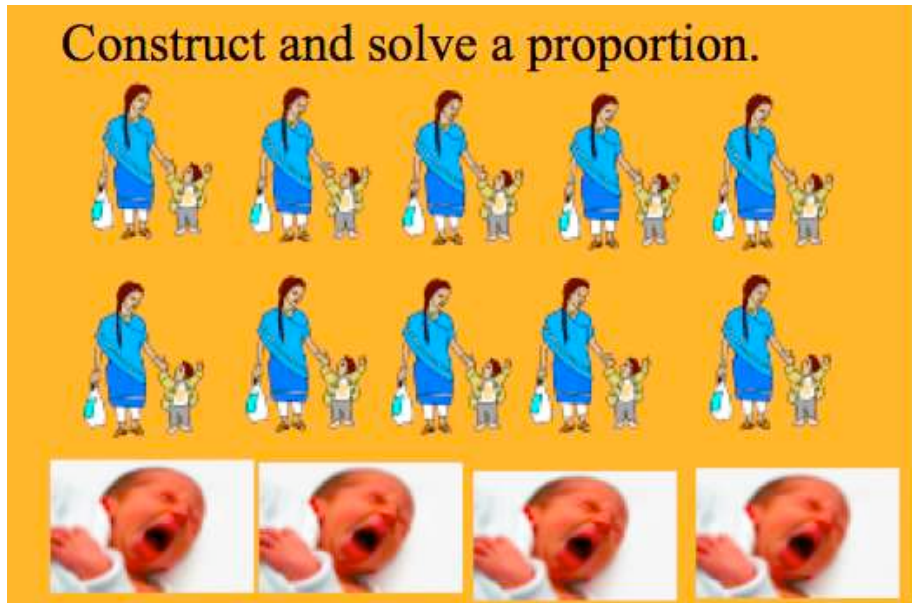
Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did you check your answer by moving the decimal point 3 places to the left its original point in the standard form and then back 3 places to the right?

Yes \_\_\_\_\_ No \_\_\_\_\_

n`1

# 9 Construct and solve a proportion.



What percent of the figures are babies' figures?

Hamlet Hernandez

## EVALUATION FOR (exercise 9)

1. Did you constructed a proportion to solve this problem?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you write the problem in your own words?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you use cross multiplication?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Was this problem difficult for you?

Yes \_\_\_\_\_ No \_\_\_\_\_

10

## SIMPLE INTEREST

The formula for finding simple interest is: Interest = Principal \* Rate \* Time. If \$100 was borrowed for 2 years at a 10% interest rate, the interest would be  $\$100 * 10/100 * 2 = \$20$ . The total amount that would be due would be  $\$100 + \$20 = \$120$ .

**What is the Total Simple Interest for the Period?**

Note: Your answer should begin with a dollar sign (e.g. \$2.36 not 2.36)

Start

For a \$303.59 loan for 2 years and a 15% interest rate?

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<http://www.aaamath.com/grade8.html>

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## EVALUATION (exercise 10)

1. Did you read the formula for finding simple interest?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you get a good idea how to work with the formula for simple interest?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you notice how 10% was changed into a fraction?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did you notice how you could have canceled the value in the principal and the one hundred valued in the denominator of the 10% in order to simplify and then evaluate the formula?

Yes \_\_\_\_\_ No \_\_\_\_\_

5. Did you notice that the simple interest was added to the principal to get the total amount due?

Yes \_\_\_\_\_ No \_\_\_\_\_

# 11 COMMISSION

A commission is generally a percentage of the sales price of an item. For example, if a salesperson receives a 10% commission on their sales and sells \$1500 worth of merchandise, they would earn \$150 in commissions.

Earnings on \$483.74 of sales at 14% commission?

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# EVALUATION FOR

1. Did you notice what is a commission generally for?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you notice how easy it is to do this computation by changing the 10 % into a fraction?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you also notice that when you want ten percent of any number that has a zero, you can simply drop a zero to get your answer?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did

Yes \_\_\_\_\_ No \_\_\_\_\_

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Answer all three exercises

SIMPLIFY

---

1.   $\times 10^{-8}$  =

---

2.  =   $\times 10^{\text{$

---

3.   $\times 10^{\text{$  IS

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<http://www.aaamath.com/grade8.htm>  
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## EVALUATION (exercise 12)

1. Did you notice that the number is example one is less than one as the exponent is less than one?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did notice that the number in exercise 2 is less than one and therefore the exponent is negative?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you notice that the first factor in the answer for exercise two was 3.27?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did you notice that the number in exercise 3 was greater than zero, as the exponent of the second factor in the scientific representation was positive?

Yes \_\_\_\_\_ No \_\_\_\_\_

13

To find the amount of discount calculate 25% of \$20. ( $\$20.00 \times 25/100 = \$5.00$ )

Subtract the discount from the original price to find the sale price. ( $\$20.00 - \$5.00 = \$15.00$  sales price).

## Find the

Sale price of a \$16.17 item that is 25% off?

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<http://www.aaamath.com/grade8.html>

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## EVALUATION (exercise 13)

1. Did you notice that  $25/100$  is 25% and that if we simplify this we get a simplify version which make the whole computation easier?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you notice that to find 25% of anything is the same thing as dividing the amount by 4?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you notice that to find the percent of discount is only the first step in solving discount problems?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did you had any difficulty in solving the exercise given?

Yes \_\_\_\_\_ No \_\_\_\_\_

14

## Estimating Percents

- Round percent to a close common fraction.

$$72\% \approx \frac{3}{4} \quad \frac{3}{4} = 75\%$$

- Round amount to a number that is compatible with the denominator of the fraction from above step.

$$\text{amount: } 239 \approx 240$$

You finish it up

- Multiply and simplify.

[http://www.phschool.com/atschool/academy123/html/bbapplet\\_wl-problem-434651.html](http://www.phschool.com/atschool/academy123/html/bbapplet_wl-problem-434651.html)

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## EVALUATION FOR (exercise 14)

1. Did you understand the whole problem?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you had any problem understanding the exercise?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you divided 240 by 4?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Do you think you could solve a problem like this all by yourself if given one?

Yes \_\_\_\_\_ No \_\_\_\_\_

15

## Percent Increase and Decrease

$$\frac{\text{amount of increase or decrease}}{\text{original amount}} = \text{percent increase or decrease}$$

Find:

Suppose the average attendance at a local high school's football games went down from 2000 people in 2003 to 1500 people in 2004. What was the percent decrease in attendance at the football games?

[http://www.algebralab.org/Word/Word.aspx?file=Algebra\\_PercentsII.xml](http://www.algebralab.org/Word/Word.aspx?file=Algebra_PercentsII.xml)

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# EVALUATION FOR (exercise 15)

1. Did you understand the formula for percent increase and decrease?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you understand the whole enchilada?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you subtracted 1500 from 2000?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did you divide 500 by 1500?

Yes \_\_\_\_\_ No \_\_\_\_\_

16

Add

$$a) \frac{4}{11} = \frac{\square}{\square} \quad \frac{1}{2} = \frac{\square}{\square}$$

$$b) \frac{2}{5} = \frac{\square}{\square} \quad \frac{1}{3} = \frac{\square}{\square}$$

[http://nlvm.usu.edu/en/NAV/frames\\_asid\\_106\\_g\\_2\\_t\\_1.html](http://nlvm.usu.edu/en/NAV/frames_asid_106_g_2_t_1.html)  
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# EVALUATION FOR (exercise 16)

1. Did you find the LCM for a?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you find the LCM for b?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you find the solution for a?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did you find the solution for b?

Yes \_\_\_\_\_ No \_\_\_\_\_

17

## Multiplying Mixed Numbers

Here are the steps for multiplying mixed numbers.

1. Change each number to an improper fraction.
2. Simplify if possible.
3. Multiply the numerators and then the denominators.
4. Put answer in lowest terms.
5. Check to be sure the answer makes sense.

$$5\frac{2}{3} \times \frac{1}{4}$$

<http://www.math.com/school/subject1/lessons/S1U4L7GL.html#sm5>

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## EVALUATION FOR (exercise 17)

1. Did you read 1-5?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you multiply  $3 \cdot 5$  and then added 2

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did did you get 18 for  $3 \cdot 5 + 2$ ?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did you find this problem difficult?

Yes \_\_\_\_\_ No \_\_\_\_\_

## 18 ADDING MIXED NUMBERS

Band practice lasts  $2\frac{1}{2}$  hours, and then you go home and practice for another  $1\frac{1}{3}$  hours. How many hours did you practice?

$$\begin{array}{r} 2\frac{1}{2} \\ + 1\frac{1}{3} \\ \hline \end{array}$$

[http://www.phschool.com/atschool/academy123/html/bbapplet\\_wl-problem-434508.html](http://www.phschool.com/atschool/academy123/html/bbapplet_wl-problem-434508.html)

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# EVALUATION FOR ( exercise 18)

1. Did you have any problem solving this problem?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you find the LCM of the denominators?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you added the whole numbers first.

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did you know how to simplified this problem?

Yes \_\_\_\_\_ No \_\_\_\_\_

19

Dividing Powers

$$\frac{7^8}{7^5} = \frac{7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7}{7 \cdot 7 \cdot 7 \cdot 7 \cdot 7}$$

★ Notice

$$\frac{7^8}{7^5} = 7^3$$

★ Rule: To DIVIDE numbers or variables with the SAME nonzero base, SUBTRACT the EXPONENTS.

TRY THIS

I.) 
$$\frac{4^5}{4^3}$$

[http://www.phschool.com/atschool/academy123/html/bbapplet\\_wl-problem-430863.html](http://www.phschool.com/atschool/academy123/html/bbapplet_wl-problem-430863.html)

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## EVALUATION FOR (exercise 19)

1. Did you understand the problem and were able to solve the "Try This" exercise?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you notice that canceling is the same as subtracting?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you understand the rule for dividing powers with the same nonzero base?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Was this math concept easy for you?

Yes \_\_\_\_\_ No \_\_\_\_\_

20

Simplifying Powers

$$\begin{aligned}(6^2)^3 &= (6^2) \cdot (6^2) \cdot (6^2) \\ &= 6^{2+2+2} \\ &= 6^6\end{aligned}$$

TRY THIS:

I.)  $(k^7)^2$

[http://www.phschool.com/atschool/academy123/html/bbapplet\\_wl-problem-430862.html](http://www.phschool.com/atschool/academy123/html/bbapplet_wl-problem-430862.html)

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## EVALUATION FOR exercise 20

1. Did you understand how to simplify powers?

Yes \_\_\_\_\_ No \_\_\_\_\_

2. Did you learned the shortcut rule for simplifying a power raised to some power?

Yes \_\_\_\_\_ No \_\_\_\_\_

3. Did you do the "Try This" mentally using the rule?

Yes \_\_\_\_\_ No \_\_\_\_\_

4. Did you figure out the rule for simplifying a power raised to some power?

Yes \_\_\_\_\_ No \_\_\_\_\_

# End of Unit Two Pre-Algebra Review

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