Accelerated Math Review for TEST Name_____

Ch.3 Rational Numbers Block____ Date_____

Study Guide Practice Problems must be completed, corrected, and work fixed prior to the TEST on Wednesday, October 30. Key will be posted Tuesday October 29 on my website. This is a 20 point "other assignment".

This is a no calculator test.

It covers ALL of chapter 3 plus operations with decimals (in notes).

You should be able to do the following:

*Convert fractions to decimals and decimals to fractions
*Order and compare rational numbers
*Follow algebraic steps to convert repeating decimals to fractions
*Identify and use the defintion to prove a number is rational
*Identify number sets to which a number belongs (natural, whole, integer, rational)
*Add, subtract, multiply and divide fractions, mixed numbers and decimals with signs
*Solve application problems
*Use the order of operations agreement with rational numbers
*Multiply and Divide fractions that include variables
*Evaluate algebraic expressions using rational numbers for the variables
*Graph and identify rational numbers on the number line.

You should know and be able to use the following vocabulary words:

rational number	bar notation	terminating decimal	proper fraction
integer	reciprocal	repeating decimal	median
natural number	whole number	multiplicative inverse	improper fraction
product	quotient	additive inverse	sum
difference	simplest terms	mean	

1) Find the multiplicative inverse of $5\frac{1}{2}$ **.**	**2) Find the quotient of** $\frac{1}{3}$ **and** $\frac{1}{2}$ **.**	**3)** $\left(\frac{1}{2}\right)\left(-\frac{1}{4}\right)\left(\frac{1}{3}\right)$
4) $\left(\frac{ab}{3}\right)\left(\frac{6}{a}\right) =$	**5) Find the product of** $\frac{5}{12}$ **and** $\frac{1}{10}$ **.**	**6) Find the reciprocal of - 8.**
7) Prove that 1.3 is a rational number using the definition of a rational number.	**8) Evaluate - 4a if a =** $\frac{1}{2}$	**9) Circle the number sets that -9 belongs to.** **Natural** **Rational** **Integer** **Whole**

10) $-0.0012 \div 0.03$	**11)** $-\frac{5}{9} + \frac{5}{12}$	**12)** $\left(\frac{75}{36}\right)\left(\frac{-51}{125}\right)\left(\frac{45}{68}\right)$
13) Evaluate if $a = -\frac{2}{3}$, $b = \frac{1}{2}$ and $c = -\frac{1}{5}$ $ab^4 + c$	**14) A science workbook is** $\frac{3}{4}$ **in. thick. How many worbooks will fit on a 2- ft shelf?**	**15) (-679 - 2.6) + (4.02 - 56)**
16) True or False ? Explain your reasoning. **The sum of two rational numbers is always greater than each of the two addends.**	**17) Circle all sets of numbers to which** $5.\overline{3}$ **belongs.** **rational irrational natural** **whole integer**	**18)** $\frac{-7}{8} \div 2\frac{7}{12}$

19) -0.0567 $\div$ 0.9

20) (-15.4)(0.0029)

21) Write the fraction that is equivalent to each decimal. Be sure it is in simplest form.

A) 0.062 B) 0.8

C) 0.18 D) $0.\overline{3}$

D) 0.375 E) $0.\overline{2}$

22) $\left(\frac{2}{5}\right)^2 \div \left(\frac{3}{10}\right) - \left(\frac{3}{4}\right)\left(\frac{8}{9}\right)$

23) Find the <u>mean</u> and <u>median</u> of this set of numbers.

-0.52 3.8 -1.8 0.25 0.03

24) $\frac{7}{8}$ of the 240 7th graders at LMS made honor roll for the first marking period. Of these students, $\frac{1}{5}$ made highest honors. How many students made highest honors?

25) Write $0.3\overline{6}$ as a fraction in simplest form.

26) Find the area and perimeter of this rectangle.

27) Sometimes, Always, Never Explain your reasoning. Assume nonzero values.

When you multiply a proper fraction by an improper fraction, you get a proper fraction.

28) $-54\frac{2}{5} - {}^{-}24\frac{7}{8}$

29) -9.82 + 24.7

30) $34\frac{2}{9} - 74\frac{1}{6}$

31) Write $0.1\overline{25}$ as a fraction in lowest terms.

32) Sam ran $4\frac{2}{3}$ miles in $\frac{3}{4}$ of an hour. Find how many miles per hour he was running.

33) The table shows the distance Jon runs over a four-day period.

Jon's Running	
Day	Distance(mi)
Sat	4.5
Sun	$10\frac{1}{4}$
Mon	8.8
Tues	$2\frac{1}{5}$

A) How many more miles did he run on Monday than on Tuesday?

B) What was his total distance, in miles, that he ran for the four days?

C) How many more miles did Jon run on Sunday than on Saturday?

D) Find his average miles per day for the four days (Remember to refer to the total in Part B)