

Math 7 REVIEW for TEST

Chapter 4 : Rational Numbers

Name _____

Block _____

Date _____

Key

This is a 20 point "Other Assignment". Practice problems must be complete, correct work shown, and correct answer given. The KEY will be on my website before the TEST so you can correct AND fix your work. This is due on the day of the test, Monday Nov 4, BEFORE the test.

This test covers sections 4.1-4.6, skips 4.7, includes 4.8, includes notes on operations with decimals AND it is a NO CALCULATOR test.

You should be able to do the following:

- *Convert fractions to decimals and decimals to fractions in simplest form.
- *Compare and order fractions and decimals (including ones with signs)
- *Identify number sets to which a number belongs (whole, integer, rational)
- *Add, subtract, multiply and divide fractions, mixed numbers and decimals with signs
- *Solve application problems(including finding mean and median)
- *Find the area and perimeter of a square or rectangle.
- *Use the order of operations agreement with rational numbers
- *Evaluate algebraic expressions using rational numbers for the variables

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

rational number	bar notation	terminating decimal	
integer	reciprocal	repeating decimal	
whole number	improper fraction	product	
quotient	difference	simplest terms	mean
median	sum	perimeter	
area	rectangle	square	

1) 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?

$$8.8 - 2\frac{1}{5}$$

$$\begin{array}{r} 8.8 \\ - 2.2 \\ \hline 6.6 \text{ mi} \end{array}$$

or

$$\begin{array}{r} 8\frac{4}{5} \\ - 2\frac{1}{5} \\ \hline 6\frac{3}{5} \text{ mi} \end{array}$$

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

Add up all 4 days

$$\begin{array}{r} 4.5 \\ 10.25 \\ 8.8 \\ + 2.2 \\ \hline 25.75 \text{ mi} \end{array}$$

or

$$\begin{array}{r} 4\frac{1}{2} \\ + 10\frac{1}{4} \\ + 8\frac{4}{5} \\ + 2\frac{1}{5} \\ \hline 25\frac{3}{4} \text{ mi} \end{array}$$

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

$$10\frac{1}{4} - 4.5$$

$$\begin{array}{r} 10.25 \\ - 4.5 \\ \hline 5.75 \text{ mi} \end{array}$$

or

$$\begin{array}{r} 10\frac{1}{4} = 10\frac{1}{4} = 9\frac{5}{4} \\ - 4\frac{1}{2} = 4\frac{2}{4} = 4\frac{2}{4} \\ \hline 5\frac{3}{4} \text{ mi} \end{array}$$

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

$$\begin{array}{r} 25.75 \div 4 \\ \underline{6.4375} \\ 4 \overline{)25.7500} \\ \underline{24} \\ 17 \\ \underline{16} \\ 15 \\ \underline{12} \\ 30 \\ \underline{28} \\ 20 \end{array}$$

6.4375 mi/day

or

$$\begin{array}{r} 25\frac{3}{4} \div 4 \\ \frac{103}{4} \cdot \frac{1}{4} \\ \frac{103}{16} \\ 6\frac{7}{16} \text{ mi/day} \end{array}$$

2) Find the perimeter and area of these rectangles:

A) Perimeter

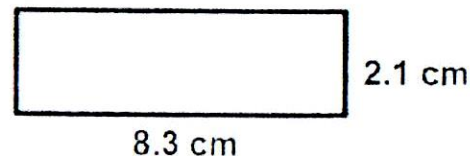
*Add up all sides

$$\begin{array}{r} 8.3 \\ + 2.1 \\ \hline 10.4 \end{array} \quad \begin{array}{l} 10.4 \text{ (2 sides)} \\ + 10.4 \text{ (2 sides)} \\ \hline 20.8 \text{ cm} \end{array}$$

Area $A = (8.3)(2.1)$

$$A = 17.43 \text{ cm}^2$$

$$\begin{array}{r} 8.3 \text{ (1)} \\ \times 2.1 \text{ (1)} \\ \hline 83 \\ 1660 \\ \hline 17.43 \text{ (2)} \end{array}$$



B) Perimeter

$$P = 1\frac{2}{3} + 1\frac{2}{3} + 4\frac{1}{2} + 4\frac{1}{2}$$

$$P = 2\frac{4}{3} + 9$$

$$P = 3\frac{1}{3} + 9$$

$$12\frac{1}{3} \text{ m}$$

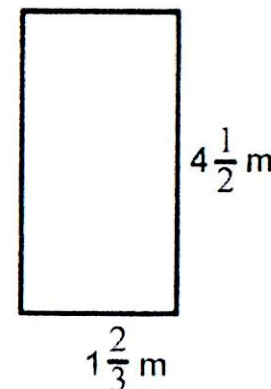
Area

$$A = 1\frac{2}{3} \cdot 4\frac{1}{2}$$

$$= \frac{5}{3} \cdot \frac{9}{2}$$

$$= \frac{15}{2}$$

$$= 7\frac{1}{2} \text{ m}^2$$



3) Order these numbers from smallest to greatest. (Give final answer using the letters).

A 50%

B) $\frac{2}{5}$

C) 0.05

D) $\frac{19}{50}$

E) $0.\overline{4}$

A .5

B .4

C .05

D .38

E .444...

C D B E A

<p>4) Find the reciprocal of $5\frac{1}{2}$. $5\frac{1}{2} = \frac{11}{2}$</p> <p>so flip numerator and denominator. $\left(\frac{2}{11}\right)$</p>	<p>5) Find the quotient of $\frac{1}{3}$ and $\frac{1}{2}$. $\frac{1}{3} \div \frac{1}{2}$</p> <p>$\frac{1}{3} \cdot \frac{2}{1}$</p> <p>$\left(\frac{2}{3}\right)$</p>	<p>6) $\left(\frac{1}{2}\right)\left(-\frac{1}{4}\right)\left(\frac{1}{3}\right)$</p> <p>$\frac{1}{2} \cdot -\frac{1}{4} \cdot \frac{1}{3}$</p> <p>$\left(-\frac{1}{24}\right)$</p>
<p>7) $5\frac{1}{2} \div -\frac{3}{4}$</p> <p>$\frac{11}{2} \cdot -\frac{4}{3}$</p> <p>$-\frac{22}{3} = \left(-7\frac{1}{3}\right)$</p>	<p>8) Find the product of $\frac{5}{12}$ and $\frac{1}{10}$. $\frac{5}{12} \cdot \frac{1}{10}$</p> <p>$\left(\frac{1}{24}\right)$</p>	<p>9) Find the reciprocal of -8</p> <p>$-8 = -\frac{8}{1}$</p> <p>flip numerator and denominator</p> <p>$\left(-\frac{1}{8}\right)$</p>
<p>10) $-99 + (-7.9)$</p> <p>Add Answer neg</p> <p>$\begin{array}{r} 99. \\ 7.9 \\ \hline 106.9 \end{array}$</p> <p>$\left(-106.9\right)$</p>	<p>11) Evaluate $-4a$ if $a = \frac{1}{2}$.</p> <p>$-4\left(\frac{1}{2}\right) = -\frac{4}{1} \cdot \frac{1}{2}$</p> <p>$\left(-2\right)$</p>	<p>12) Circle the number sets that -9 belongs to.</p> <p>$\left(\text{Rational}\right)$</p> <p>$\left(\text{Integer}\right)$</p> <p>Whole</p>

13) $-0.0012 \div 0.03$

$$\begin{array}{r} 0.03 \overline{) 0.0012} \\ \underline{.04} \\ 3 \overline{) 0.12} \\ \underline{-12} \end{array}$$

-0.04

14) $-\frac{5}{9} + \frac{5}{12}$

$$-\frac{20}{36} + \frac{15}{36}$$

$-\frac{5}{36}$

15) $-82.4 + 1.27$

Subtract
Answer neg

$$\begin{array}{r} 82.40 \\ - 1.27 \\ \hline 81.13 \end{array}$$

-81.13

16) A science workbook is $\frac{3}{4}$ in. thick. How many workbooks will fit on a 2-ft in shelf?

How many $\frac{3}{4}$ in are in 2 ft?

$$2 \text{ ft} \div \frac{3}{4} \text{ in}$$

$$24 \text{ in} \div \frac{3}{4} \text{ in}$$

$$\frac{24}{1} \cdot \frac{4}{3}$$

32 workbooks

17) $5.64 - 14$

$$5.64 + -14$$

Subtract
Answer neg

$$\begin{array}{r} 39 \\ - 14.00 \\ \underline{- 5.64} \\ 8.36 \end{array}$$

-8.36

18) $-\frac{7}{8} \div 2\frac{7}{12}$

$$-\frac{7}{8} \div \frac{31}{12}$$

$$-\frac{7}{8} \cdot \frac{12}{31}$$

$-\frac{21}{62}$

19) $-\frac{2}{3} - \frac{3}{4}$

$$-\frac{8}{12} + \frac{-9}{12}$$

$$-\frac{17}{12}$$

$$-1\frac{5}{12}$$

20) $-\frac{2}{3} \div \frac{3}{4}$

$$-\frac{2}{3} \cdot \frac{4}{3}$$

$$-\frac{8}{9}$$

21) Find the mean of these numbers.

1.2 $6\frac{1}{2}$ $4\frac{3}{5}$

Add all three
Divide by 3

$$\begin{array}{r} 1.2 \\ 6.5 \\ 4.6 \\ \hline 12.3 \end{array}$$

$$\begin{array}{r} 4.1 \\ 3 \overline{)12.3} \\ \underline{12} \\ 3 \end{array}$$

$$\begin{array}{r} 1\frac{2}{10} \\ + 6\frac{5}{10} \\ + 4\frac{6}{10} \\ \hline 11\frac{13}{10} \end{array}$$

$$= 12\frac{3}{10}$$

$$12\frac{3}{10} \div 3$$

$$\frac{123}{10} \cdot \frac{1}{3} = \frac{41}{10}$$

$$4.1$$

$$4\frac{1}{10}$$

22) $-\frac{2}{3} \times \frac{3}{4}$

$$-\frac{2}{3} \cdot \frac{3}{4}$$

$$-\frac{1}{2}$$

23) $-\frac{2}{3} + \frac{3}{4}$

$$-\frac{8}{12} + \frac{9}{12}$$

$$\frac{1}{12}$$

24) $-2\frac{1}{5} - (-\frac{1}{2})$

$$-2\frac{2}{10} + 1\frac{5}{10}$$

subtract
Answer
neg

$$2\frac{2}{10} = 1\frac{12}{10}$$

$$-1\frac{5}{10} = -1\frac{5}{10}$$

$$\frac{7}{10}$$

$$-\frac{7}{10}$$

25) Write each decimal as a fraction in simplest form:

A) 0.062

$$\frac{62}{1000} = \frac{31}{500}$$

B) $0.\bar{6} = \frac{2}{3}$

C) 0.6

$$\frac{6}{10} = \frac{3}{5}$$

D) 0.125

$$\frac{125}{1000} = \frac{1}{8}$$

26) Write each fraction as a decimal.

A) $\frac{2}{9} = 0.\bar{2}$

B) $\frac{27}{50} = \frac{54}{100}$

$$0.54$$

C) $4\frac{7}{100}$

$$4.07$$

D) $\frac{27}{36} = \frac{3}{4}$

$$0.75$$

27) Find the median of these numbers.

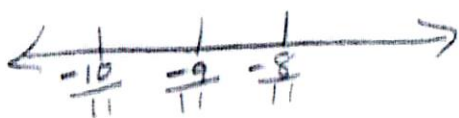
-1.2 $-6\frac{1}{2}$ $-4\frac{3}{5}$ 3 -1.5

Put from sm \rightarrow lg

$-6\frac{1}{2}$ $-4\frac{3}{5}$ -1.5 -1.2 3
middle #

28) $<$ $>$ or $=$? Show reasoning.

A) $-\frac{8}{11} > -\frac{10}{11}$



B) $\frac{2}{9} > \frac{1}{8}$

$$\frac{16}{72} > \frac{9}{72}$$

$0.\bar{2} > .125$

29) Place these in order from smallest to largest. Give answer using the letters.

A $\frac{5}{9}$ $.5$ sm ①

B $\frac{2}{3}$ $.6$ ④

C 0.65 ③

D 0.65

D $\frac{3}{5}$ $.6$ ②

$$A D C B$$

30)

A) -6×0.88

$$-5.28$$

$$\begin{array}{r} 4 \\ .88 \\ \times 6 \\ \hline 5.28 \end{array}$$

B) $-6 + 0.88$

subtract
Answer Neg

$$\begin{array}{r} 59 \\ 6.00 \\ - .88 \\ \hline 5.12 \end{array}$$

$$-5.12$$

$$31) \frac{2}{3} + \left(\frac{3}{4}\right)\left(-\frac{8}{9}\right)$$

$$\frac{2}{3} + \frac{-2}{3}$$

$$\textcircled{0}$$

Show arithmetic here

$$\frac{\cancel{12}}{4} \cdot \frac{\cancel{8}^{-2}}{\cancel{9}} = \frac{-2}{3}$$

$$32) -4.2(56 - 3.7)$$

$$-4.2(52.3)$$

$$\textcircled{-219.66}$$

$$\begin{array}{r} 52.3 \\ - 3.7 \\ \hline 52.3 \end{array}$$

$$\begin{array}{r} 52.3 \\ 4.2 \\ \hline 1046 \\ 20920 \\ \hline 219.66 \end{array}$$

$$33) \left(-\frac{1}{2}\right)^3 \left(2\frac{3}{4} - 5\frac{1}{4}\right)$$

$$\left(-\frac{1}{2}\right)^3 \left(2\frac{3}{4} + -5\frac{1}{4}\right)$$

$$-\frac{1}{8} \cdot -2\frac{1}{2}$$

$$\textcircled{\frac{5}{16}}$$

$$5\frac{1}{4} = 4\frac{5}{4}$$

$$-2\frac{3}{4} = -2\frac{3}{4}$$

$$2\frac{2}{4}$$

$$2\frac{1}{2}$$

$$-\frac{1}{2} \cdot -\frac{1}{2} \cdot -\frac{1}{2}$$

$$-\frac{1}{8}$$

$$-\frac{1}{8} \cdot -\frac{5}{2} = \frac{5}{16}$$

$$34)$$

$$\left(-\frac{2}{3}\right)^3$$

$$-\frac{2}{3} \cdot -\frac{2}{3} \cdot -\frac{2}{3}$$

$$\textcircled{\frac{-8}{27}}$$

35) How many $2\frac{1}{4}$ ounce servings of cereal will be in a 24 ounce box of cereal?

$$24 \div 2\frac{1}{4}$$

$$\frac{24}{1} \div \frac{9}{4}$$

$$\frac{24}{1} \cdot \frac{4}{9} = \frac{32}{3} = 10\frac{2}{3} \text{ servings}$$

36) Carla saves $\frac{1}{3}$ of her allowance and spends $\frac{1}{2}$ of her allowance. How much of her allowance is left?

$$\text{saves } \frac{1}{3} = \frac{2}{6}$$

$$\text{spends } \frac{1}{2} = \frac{3}{6}$$

$$\frac{2}{6} + \frac{3}{6} = \frac{5}{6}$$

$$1 - \frac{5}{6} = \frac{6}{6} - \frac{5}{6} = \frac{1}{6}$$

37)

$$\left(\frac{3}{4}\right) \left(\frac{-3}{5}\right) \left(\frac{5}{-28}\right)$$

$$\frac{3}{4} \cdot \frac{-3}{5} \cdot \frac{1}{-4}$$

$$\frac{-9}{16}$$

38) A recipe calls for $2\frac{1}{2}$ cups of flour. If Sara triples the recipe, how much flour will she need to use?

$$2\frac{1}{2} \cdot 3$$

$$\frac{5}{2} \cdot \frac{3}{1}$$

$$\frac{15}{2}$$

$$7\frac{1}{2} \text{ cups}$$