## PAP                          Semester Final Exam Modules 1-9                          STUDY GUIDE
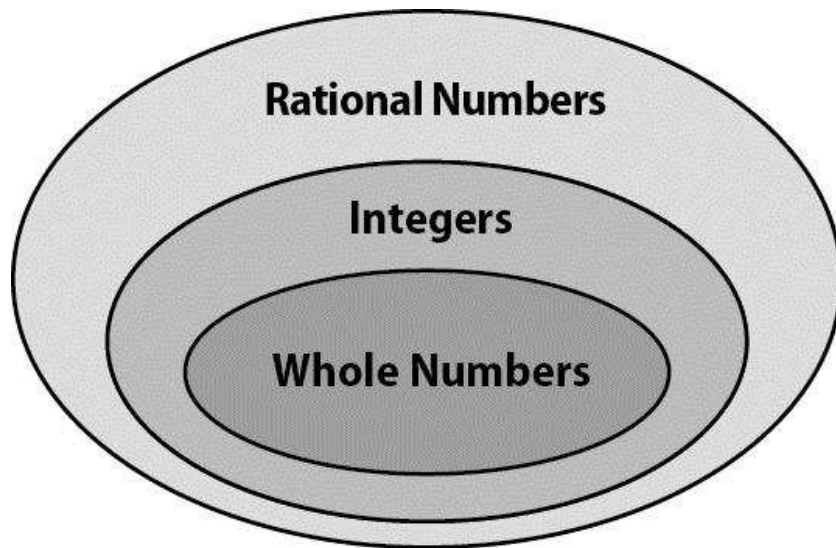
### CLASSIFYING RATIONAL NUMBERS

Place each number in the correct place on the Venn diagram.

Then list **ALL the sets** of numbers to which each number belongs using

> **R** for rational numbers,

> **I** for integers, and

> **W** for whole numbers.

1]       72 _____

2]       0.23 _____

3]       0 _____

4]       - 4.5 _____

5]       $\dfrac{4}{5}$ _____

6]       3 _____

### COMPARE & ORDER RATIONAL NUMBERS

Write the following sets of numbers in **ascending** order.

7]       23%              0.54              - 0.6

8]       - 2.20           - 2.12            - 2

Write the following sets of numbers in **descending** order.

9]     -4.22          - 4.14          $-4\frac{1}{2}$

10]    0.07           0.77            0.717

## Model Integer Addition Using Zero Pair Models
*Be sure to have a **MODEL** that accurately represents the given equation using zero pairs, and be sure to **BOX** your final answer.*

11]    5 + 2 =                                         12]    -4 + 9 =

## Model Integer Subtraction Using Zero Pair Models
***Rewrite each problem as an addition problem.***
*Be sure to have a **MODEL** that accurately represents the given equation using zero pairs, and be sure to **BOX** your final answer.*

13]    3 – 8 =                                         14]    -5 – 7 =

## Model Integer Addition & Subtraction Using a Number Line
Use the number line to model the given problem. Rewrite the problem as an addition problem if necessary.

15]    -6 – (-2) =



16]    5 + (-2) =

## Multiplying Integers

17]  -11(-18)

18]  9(-7)

19]  -12(5)

20]  -8(-14)

## Dividing Integers

21]  -28 ÷ (-7)

22]  $\frac{-75}{5}$

23]  $\frac{63}{-9}$

24]  54 ÷ (-6)

## Applying Addition and Subtraction of Integers

Find the value of each expression.  Show all lines of work. Remember to work from left to right and to rewrite the problems as addition problems if necessary.

25]  -92 + 20 − 7

26]  14 − 22 + 8

## Multiplying Fractions and Mixed Numbers

Cross simplify, if possible.  Show the work that leads to your answer. All answers must be **BOXED** and in **SIMPLEST FORM**.

27]  $\frac{7}{10} \times \frac{5}{7} =$

28]  $6 \times 3\frac{1}{2} =$

29]  $7\frac{1}{9} \times \frac{3}{8} =$

30]  $\frac{2}{21} \times 42 =$

## Dividing Fractions and Mixed Numbers

Show the work that leads to your answer. Take the **_RECIPROCAL_** of the second fraction **(KEEP-CHANGE-FLIP)**. All answers must be **_BOXED_** and in **_SIMPLEST FORM_**.

31]  $\frac{7}{10} \div \frac{3}{5} =$

32]  $\frac{5}{6} \div 10 =$

33]  $6\frac{2}{7} \div \frac{3}{7} =$

34]  $4\frac{1}{6} \div 3\frac{1}{3} =$

## Multiplying Decimals

**Show all work that leads to your answer.** Box your final answer. Be sure to count the decimal digits and place the decimal properly in the product.

35]  Kelsey earns $11.75 per hour for gardening.  If she works 9.5 hours this week, how much did she earn?

36]  The sticker on Ryan's new car states that the car averages 34.5 miles per gallon.  If the fuel tank holds 12.3 gallons, how far can Ryan travel on one full tank of gas?

## Dividing Decimals

**Show all work that leads to your answer.** Box your final answer. Be sure to correctly identify the dividend and the divisor. Eliminate decimal divisors if necessary.

37]  Mrs. Phillips bought 1.5 pounds of ground beef from HEB.  She paid a total of $6.75 for the ground beef.  What was the price per pound?

38]  The Henry family drove 276.5 miles on that family vacation.  They used 7.9 gallons of gas.  How many miles per gallon of gas did they get on the trip?

## RATIOS
**Remember ORDER MATTERS. All answers must be in <u>SIMPLEST FORM</u>.**

39] There are 15 sugar cookies and 18 chocolate chip cookies for our cookie exchange party. Write a ratio, as a fraction, comparing the number of chocolate chip cookies to the number of sugar cookies in simplest form.

40] In Ms. Hart's class, there are 22 students. Ten of them are boys. Write a ratio, in fraction form, comparing the number of boys to the number of girls.

## SOLVING PROPORTIONS
**Each problem must have a LABELING RATIO, a GIVEN RATIO, and a NEW RATIO. Set up a proportion and solve. Box AND label your answer.**

41] A china shop receives a shipment of 125 dishes in 5 boxes. At this rate, how many dishes will it receive in a shipment of 15 boxes?

42] There are 210 students in the 10 classes at East Middle School. At this rate, how many students are in 6 classes?

## PERCENT PROPORTIONS: Set up a proportion and solve. Box AND label your answer.
**Each problem must have a LABELING RATIO, a PERCENT RATIO, and a NEW RATIO. Set up a proportion and solve. Box AND label your answer.**

**Find the Part.**

43] 5% of 60 _____

44] Tom was paid a 10% commission on sales of $2,850. How much money was he paid in commissions?

**Find the Whole.**

45]     10% of what number is 8? _____

46]     In Mrs. Fisher's first-period class, 7 students did not complete their homework. This was 35% of the class. How many students are in Mrs. Fisher's first-period class?

**Find the Percent.**

47]     25 is what % of 50? _____

48]     Tina sold $350 worth of magazine subscriptions. If she earned $175, what percent was she paid in commissions?

## Fraction Decimal Percent Conversions

Complete the table.

| FRACTION | DECIMAL | PERCENT |
|---|---|---|
| 49]    $\frac{4}{5}$ | | |
| 50] | 0.16 | |