**![C:\Documents and Settings\aunger\Local Settings\Temporary Internet Files\Content.IE5\37IZHT3V\MPj03876890000[1].jpg]()Academic Skills Center**

**Study Packet**

**Preparation for the**

**Arithmetic Assessment**

Solve each problem. Please show all work.

1. Find the difference between 7,986 and 20,500. (Hint: The word *difference* means subtraction. Rewrite the problem. Put the larger number on top when setting up the problem.)

 20,500

- 7,986

1. What is the product of 709 and 68? (Hint: The word *product* means multiplication. Rewrite the problem.)

 709

× 68

1. Find the sum of the following numbers: 16

385

4012

856

(Hint: The word *sum* means addition. Rewrite the problem.)

16

 385

 4012

+ 856

1. What is the quotient of 27,438 and 34? (Hint: The word *quotient* means division)

34 27,438

1. A plane flew for six hours. For two hours, the average speed was 265 mph. For four hours, the average speed was 490 mph. How far did the plane travel in six hours? *(Hint: To find distance traveled, multiply speed and time. Add these products together.)*

$\left(265×2\right)$ $+ \left(490×4\right)$



1. Abe worked three hours overtime on Thursday and four hours overtime on Friday. He makes $12.50 an hour for overtime work. Which of the following expresses the amount Abe made for overtime work those two days? *(Hint: Total hours overtime worked multiplied to overtime rate will find the total amount made for overtime.)*

**(1)** (12.50) × 3 + 4

**(2)** 12.50(3 + 4)

**(3)** (12.50 + 4)

**(4)** 4 × 3 × 12.50

**(5)** 12.50(3 × 4)

1. Subtract 7.42 from 300 (Hint: Don’t forget to line up the decimal points. The decimal point lies to the right of any whole number. Add zeros to empty places as needed.)

 300.00

 - 7.42

1. Find the sum of 2.91, 46, and 1.085. (Hint: the word *sum* means addition. Line up the decimal points and add zeros to empty places as needed.)

 2.910

 46.000

 + 1.085

1. Simplify $\frac{35.36}{17}$ (Hint: This is a division problem.)

 17 35.36

1. Find the product of 1.84 and 2.5 (Hint: The word *product* means multiplication. Multiply as you would with whole numbers. Count the total number of decimal places in each number and add that many decimal places in your answer, moving from right to left.)

 1.84

 × 2.5 Note: There will be 3 decimal places in your product.

1. Divide 156 by 6.5

6.5 156. To divide, you must make the divisor a whole number by multiplying the divisor by ten

(6.5 → 65; move one decimal place to the right); do the same to the dividend (156→1560).

 65 1560 Now, divide the two new quantities.

1. Round **214.0863** to the nearest hundredth place. (Hint: Hundredths is the second place to the right of the decimal point. Look at the number to its right. If the number to the right is 5 or higher, then the number in the hundredths place will increase by one unit; if the number to the right is less than 5, then the number in the hundredths place remains the same. Drop all digits to the right of the hundredths place.)
2. Sam drove for 262 miles on 18 gallons of gasoline. To the nearest tenth, find the average number of miles he drove on one gallon of gasoline. (Hint: Divide miles by gallons. You must carry out the division to the hundredths place to round to the nearest tenth.)

262 ÷ 18

1. In 1960, the population of Central County was 1.75 million; in 1970, it was 2.3 million; and in 1980, it was 2.6 million. By how much did the population increase from 1960 to 1980? (Hint: Total in 1980 minus total in 1960. The information given for 1970 is not needed to solve this problem.)
2. Find the sum of 9$\frac{1}{2}$ ,$3\frac{2}{3}$ , and $6\frac{5}{6}$

(Hint: Rewrite the fractions by finding a least common denominator and multiplying the numerators by the missing factor needed to get the denominator. Next, add numerators and keep the denominator. Add whole numbers.)

 Least common denominator:

 9$\frac{1}{2}$ = 9$\frac{}{}$

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

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

 (Look carefully at your answer; improper fractions must be converted to mixed numbers, and then the whole numbers can be added together.)

1. How much greater is $7\frac{1}{3}$ than $5\frac{7}{8}$ ?

(Hint: This is a subtraction problem. Find a common denominator and rewrite your numerators)

7$\frac{1}{3}$ = $7\frac{}{}$

 - $5\frac{7}{8}$ = $5\frac{}{}$ (Note: you will have to borrow. This is done by borrowing from the whole number and adding the denominator to your numerator.)

1. Find the quotient of 8 and $2\frac{2}{3}$

$\frac{8}{1}÷2\frac{2}{3}$ (Hint: Quotient indicates division)



$\frac{8}{1}÷\frac{8}{3}$ (Convert $2\frac{2}{3}$ to an improper fraction)

$\frac{8}{1}×\frac{3}{8}$ (Multiply the first number by the second’s reciprocal. To multiply fractions: multiply numerators, then multiply denominators.)

 (Note: Simplify the answer by dividing out common factors from the numerator and denominator.)

1. What is the product of $2\frac{4}{5}$ and $3\frac{3}{4}$?

 (Hint: The word *product* means multiplication.)

$\frac{14}{5}×\frac{15}{4}$ (Change the mixed numbers to improper fractions. To do this, multiply the whole number to the denominator and add the numerator. The denominator will stay the same.)

 (To make life easy, simplify by cancelling common factors top and bottom before you multiply.)

1. Find the quotient of $3\frac{1}{2}$ and $\frac{3}{8}$

 (Hint: This problem is similar to # 17.)

1. Arrange the following in order from the smallest to the largest:

 $\frac{3}{4}$ $\frac{2}{3}$ $\frac{5}{9}$ $\frac{5}{6}$



(Hint: To compare fractions, you must find a common denominator for the given fractions and convert them into equivalent fractions by rewriting the numerators.)

 LCD= \_\_\_\_\_\_

 $\frac{3}{4}=\frac{}{}$ $\frac{2}{3}=\frac{}{}$ $\frac{5}{9}=\frac{}{}$ $\frac{5}{6}=\frac{}{}$

1. From a pipe 4 meters long, Nick cut a piece that was $1\frac{3}{4}$ meters long. Assuming no waste, which of the following expresses the length of the remaining piece?

 (Hint: original length of the pipe – length of piece removed = length of remaining piece. You may have to convert the fractional part to a decimal by dividing.)

**(1)** 4 – 1.75

**(2)** 4 – $\frac{3}{4}$

**(3)** 4 – 1.25

**(4)** $\frac{3}{4}$ – 4

**(5)** 4 – 1.34

1. The Chungs spend $\frac{1}{3}$ of their income on rent and $\frac{1}{4}$ on food. They take home $1200 a month. How much do the Chungs have left each month after paying for rent and food?

(Hints: 1. Add the fractions (Remember to find a common denominator.) 2. Multiply the result by total income. (This equals the amount spent on food and rent.) 3. Subtract this amount from total income; the result is how much income is left each month).

1. Simplify the ratio 36**:**48 (Hint: A ratio is fraction. Rewrite as a fraction ($\frac{36}{48})$ and reduce by dividing the greatest common factor out of the numerator and denominator.)

1. Solve for x in the proportion: 9 **:** x = 12 **:** 20

(Hint: A proportion is an equation involving two ratios. Since ratios are fractions, rewrite each ratio as a fraction.

$\frac{9}{x}=\frac{12}{20}$ (Multiply the two known numerical terms that are diagonally across from each other. Divide that product by the remaining known value. This process can be remember easily as ”cross-multiply and divide”.)

 (9 × 20) ÷ 12 = x

1. In a GED class of 18 students, there are 10 women. What is the ratio of the number of men to the number of women?

(Hint: First, find the number of men in the class (Total number of students minus number of women.) Then, set up a ratio as follows: Number of Men **:**  Number of Women)

1. Sam Stroud bought a raffle ticket at the Uptown Community Center. His wife bought three tickets and his son bought two. Altogether there were 300 tickets.

 What is the probability that someone in the Stroud family will win?

 (To solve, set up the following expression:$\frac{Total tickets purchases by family}{Total number of tickets}$)

(Hint: Always reduce your fraction to lowest terms)

Directions: Use the table below to answer questions 27 and 28.

**Starting Yearly Salaries**

|  |  |  |
| --- | --- | --- |
| **Job Title** | **Midvale** | **Central** **County** |
| **Police** | **$18,500** | **$22,200** |
| **Firefighters** | **$16,800** | **$18,400** |
| **Teachers** | **$11,100** | **$13,500** |

1. What is the ratio of the starting salary of a firefighter in Midvale to the starting salary of a firefighter in Central County?

 (Hint: $\frac{Salary of firefighter in Midvale}{Salary of firefighter in Central County}$)

1. What is the ratio of the starting salary of a teacher in Midvale to the starting salary of a police officer in Central County?

 (Hint: Set up the problem like you did in problem #27)

1. Change $83\frac{1}{3}$% to a fraction

$\frac{250}{3}×\frac{1}{100}$ (Hint: Replace the % sign by $\frac{1}{100}$ Convert the mixed number to an improper fraction, $\frac{\left(83×3\right)+1}{3}$, and multiply by the percent constant above. Don’t forget to reduce your fraction!)

1. Find 6.5% of 200.

 (Hint: Percent × Base = Amount. The word **“of”** means multiplication.)

 6.5% × 200 = ?

Before we solve this problem, we must first convert the percent to a decimal simply by moving the decimal point *two* places to the *left*. Then, multiply.

 .065 × 200 = ?

1. 24 is what percent of 40?

 (Hint: Use the formula from # 30, Amount = Percent × Base )

 $24=? ×40$ (Remember: the word **of** means multiplication and the word **is** means equals. In order to find the unknown value, divide the amount by the base. To convert your answer to a %, you must move the decimal point *two* places to the *right.*

1. 35% of what number is 91? (Hint: Percent x Base = Amount)
2. Find the interest on $1000 at 18% annual interest rate for 1 year and 4 months.

 (Hint: Amount of Deposit × Interest rate × Time. Remember, time must be expressed in years and the interest must be expressed in decimal form. Express the time as one whole year with the four months expressed as an additional one third; rewrite this mixed number in terms of an improper fraction to solve.)

 Interest = $1000 × .18 × 1 1/3

Directions: Use the passage below to answer questions 34-36.

 Carla started a new job with a gross salary of $1650 a month.

Her employer will deduct 20% of her salary for taxes and social security. After one year, Carla will be eligible for a raise of 8% of her gross salary.

1. Which of the following tells the amount Carla’s employer withholds each month for taxes and social security? (Hint: Review problems 30, 31 and 32.)

**(1)** $ 330

**(2)** $ 290

**(3)** $ 240

**(4)** $ 40

**(5)** Not enough information

1. What will be Carla’s net pay for her first year of employment?

(Hint: 1. Monthly Deductions = Monthly salary x 20%

 2. Monthly Salary – Deductions = Net Monthly Pay

 3. Net Monthly Pay x 12 Months = Yearly Net Salary)

 **(1)** $ 19,800

 **(2)** $ 16,500

 **(3)** $ 15,840

 **(4)** $ 13,200

 **(5)** Not enough information

1. What will Carla’s monthly gross salary be during her second year of employment? (*Gross* pay means pay without deductions.)

(Hint: Remember her Raise. The amount of her raise = Percent Increase × Monthly Salary.

Raise + Monthly Salary = Gross Monthly Pay for second year.)

**(1)** $ 1815

**(2)** $ 1782

**(3)** $ 1730

**(4)** $ 1650

**(5)**  Not enough information is provided

37. If Carrie takes 3 $\frac{1}{4}$ hours to take a final exam, what fraction of the exam can she finish in one hour?

38. The price of a pair of slacks was reduced from $80 to $60. What is the percent decrease?

39. Walter bought a stove for $300 and sold it for $360. What is the percent increase?

40. If 60 is 40% of a number, then that number is what percent of 60?

41. If we divide a number by 100, we would get the same result if we multiplied by \_\_.

42. If the decimal 123.456 is divided by 10, which two digits would the decimal point fall between?

43. If the decimal 123.456 is multiplied by 100, which two digits would the decimal point fall between?

44. On the number line, which number represents 4.2 – 1.8?

  **A B E C D**

 **0 1 2 3**

**Answers:**

1.) 12,514

2.) 48,212

3.) 5,269

4.) 807

5.) 2,490 mi

6.) (2) 12.50 (3 + 4)

7.) 292.58

8.) 49.995

9.) 2.08

10) 4.6

11) 24

12) 214.09

13) 14.6 mpg

14) 0.85 million

15) 20

16) 1 11/24

17) 3

18) 10 1/2

19) 9 1/3

20) The correct order is:

5/9, 2/3, 3/4, 5/6

21) (1) 4 –1.75

22) $500

23) 3:4 or ¾

24) 15

25) 4:5 or 4/5

26) 1/50

27) 21:23 or 21/23

28) 1:2 or 1/2

29) 5/6

30) 13

31) 60%

32) 260

33) $240

34) (1) $ 330

35) (3) $ 15,840

36) (2) $ 1782

37) $\frac{4}{13}$

38) 25%

39) 20%

40) 250%

41) .01

42) Between 2 and 3

43) Between 5 and 6

44) C