Pre-algebra

Practice Exam #03

1. Use your calculator to find the value of the expression. Round your answers to the nearest hundredth.

   a) $(3.01-4.13)^2$ b) $-0.32-(3.39-5.21)$

2. What number must be added to 0.102 to obtain 3.658? First write out the equation. Let x represent the unknown number. Then solve for x to get your solution.

3. Round your answer to the nearest thousandths. Use your calculator.

a) $2.3(4.1-3.5)^3$ b) $\frac{2(1.5)^2}{11}$ c) $\frac{3.4(6.1-8.3)}{2.3+0.02}$

4. Change each fraction to a decimal. Use you calculator. Round to the nearest thousandths.

   a) $\frac{27}{59}$ b) $\frac{106}{3460}$

5. Change each decimal to a fraction. Reduce to lowest terms.

   a) 0.875

   b) 0.008

6. Write the following ratios as a reduced fraction. **<u>Do not use your calculator!</u>**

   a) 10 to 6

   b) $\frac{2}{7}$ *to* 0.5

7. COSTCO sells 24 rolls of paper towels for $18.72. Another warehouse store sells the same brand of paper towels and charges $25.28 for 32 rolls. Which store has the better price?

8. Solve for x. **Do not use your calculator! Write your solution as a reduced fraction!**

a) $\frac{x}{3} = \frac{7}{5}$

b) $\frac{\frac{3}{2}}{x} = \frac{\frac{6}{5}}{7}$

9. Answer the following. For part c), be sure to reduce your fraction.

a) Write 0.203 as a percent. b) Write 6.7 % as a decimal. c) Write 6.4% as a fraction.

10. Write each fraction as a percent. **Use your calculator. Round your percent to the nearest hundredth!**

a) $\frac{19}{215}$

b) $\frac{238}{385}$

11. Solve the following:

a) A sales clerk has a certain commission rate. A recent paycheck showed the amount of commission earned was $3580.92. The total sales for the clerk during this pay period was $29,841.00. What is the commission rate? **First, set up the equation using x to represent the unknown quantity. Then solve for x.**

Recall: $\textit{The}\left(\%\right)\textit{of}\left(\begin{array}{c}a\\ \textit{total}\end{array}\right)\textit{is}\left(\begin{array}{c}a\\ \textit{portion}\end{array}\right).$

b) The purchase price for a microwave oven is $235.99. A retail store offers a 35% discount. What is the discount amount? What is the new purchase price? **First, set up the equation using x to represent the unknown quantity. Then solve for x.**

12. Solve the following. **First, set up the equation using x to represent the unknown quantity. Then solve for x**. Round your final solution to the nearest tenth.

a) What percent of 60 is 36?

b) 16% of what number is 41?

13. Answer the following questions. **First, set up the equation using x to represent the unknown quantity. Then solve for x. Round your solution to the nearest whole number.**

Recall: $\textit{The}\left(\%\right)\textit{of}\left(\begin{matrix}a\\ \textit{total}\end{matrix}\right)\textit{is}\left(\begin{matrix}a\\ \textit{portion}\end{matrix}\right).$

a) The total student population at a local community college is 56% female. If there are 17,358 enrolled at the college, how many female students attend this college. **Round your solution to the nearest whole number.**

b) A farmer owns 56 acres of land. Of the 56 acres, only 65% can be farmed. How many acres are available for farming? **Round your solution to the nearest whole number.**

c) An investor places $15,000.00 into a savings account. The interest rate is 5.75% compounded annually. How much money is in the savings account after two years? **Note:** $I = PRT$

d) An investor places $8,000.00 into a savings account. The interest rate is 5.75% compounded quarterly. How much money is in the savings account after four years? **Note:** $A = P\left(1 + \frac{r}{n}\right)^{nt}$

Solution

Math351

Practice Exam #03

1. Use your calculator to find the value of the expression. Round your answers to the nearest hundredth.

a) $(3.01-4.13)^2$

$(-1.12)^2$

1.2544

1.25

b) $-0.32-(3.39-5.21)$

$-0.32-(-1.82)$

$-0.32+1.82$

1.50

2. What number must be added to 0.102 to obtain 3.658? First write out the equation. Let x represent the unknown number. Then solve for x to get your solution.

$0.102+x=3.658$

$-0.102 \quad -0.102$

$x=3.556$

3. Round your answer to the nearest thousandths. Use your calculator.

a) $2.3(4.1-3.5)^3$

$2.3(0.6)^3$

$2.3(0.216)$

0.4968

0.497

b) $\dfrac{2(1.5)^2}{11}$

$\dfrac{2(2.25)}{11}$

0.4090

0.409

c) $\dfrac{3.4(6.1-8.3)}{2.3+0.02}$

$\dfrac{3.4(-2.2)}{2.32}$

$\dfrac{-7.48}{2.32}$

-3.224

4. Change each fraction to a decimal. Use your calculator. Round to the nearest thousandths.

a) $\dfrac{27}{59}$

0.4576

0.458

b) $\dfrac{106}{3460}$

0.0306

0.031

5. Change each decimal to a fraction. Reduce to lowest terms.

a) 0.875

$\frac{875}{1000}$

$\frac{35}{40}$

$\boxed{\frac{7}{8}}$

b) 0.008

$\frac{8}{1000}$

$\frac{4}{500}$

$\boxed{\frac{1}{125}}$

6. Write the following ratios as a reduced fraction. **Do not use your calculator!**

a) 10 to 6

$\frac{10}{6}$

$\boxed{\frac{5}{3}}$

b) $\frac{2}{7}$ *to* 0.5

$\frac{\frac{2}{7}}{0.5}$

$\frac{\frac{2}{7}}{\frac{5}{10}}$

$\frac{2}{7} \div \frac{5}{10}$

$\frac{2}{7} \div \frac{1}{2}$

$\frac{2}{7} \cdot \frac{2}{1}$

$\boxed{\frac{4}{7}}$

7. COSTCO sells 24 rolls of paper towels for $18.72. Another warehouse store sells the same brand of paper towels and charges $25.28 for 32 rolls. Which store has the better price?

COSTCO

$\frac{18.72}{24}$ dollars / rolls

0.78 dollars / Roll

Warehouse

$\frac{25.28}{32}$ dollars / Rolls

0.79 dollars / Roll

COSTCO is the better buy!!

8. Solve for x. **Do not use your calculator! Write your solution as a reduced fraction!**

a) $\frac{x}{3} = \frac{7}{5}$

$\frac{5x}{5} = \frac{21}{5}$

$x = \frac{21}{5}$

b) $\frac{\frac{3}{2}}{x} = \frac{\frac{6}{5}}{7}$

$7\left(\frac{3}{2}\right) = \frac{6}{5}(x)$

$\frac{7}{1}\left(\frac{3}{2}\right) = \frac{6}{5}\left(\frac{x}{1}\right)$

$\frac{21}{2} = \frac{6x}{5}$

$\frac{105}{12} = \frac{12x}{12}$

$\frac{105^{35}/_{3}}{12_{4/3}} = x$

$\frac{35}{4} = x$

9. Answer the following. For part c), be sure to reduce your fraction.

a) Write 0.203 as a percent. b) Write 6.7 % as a decimal. c) Write 6.4% as a fraction.

20.3%

0.067

$\frac{6.4}{100}\left(\frac{10}{10}\right)$

$\frac{64}{1000}$

$\frac{8}{125}$

10. Write each fraction as a percent. **Use your calculator. Round your percent to the nearest hundredth!**

a) $\frac{19}{215}$

0.0884

8.84%

b) $\frac{238}{385}$

0.6182

61.82%

11. Solve the following:

a) A sales clerk has a certain commission rate. A recent paycheck showed the amount of commission earned was $3580.92. The total sales for the clerk during this pay period was $29,841.00. What is the commission rate? **First, set up the equation using x to represent the unknown quantity. Then solve for x.**

Recall: *The* $\left(\%\right)$ *of* $\left(\begin{matrix}a\\ total\end{matrix}\right)$ *is* $\left(\begin{matrix}a\\ portion\end{matrix}\right)$.

$$x \cdot 29{,}841.00 = 3{,}580.92$$

$$\frac{29{,}841x}{29{,}841} = \frac{3{,}580.92}{29{,}841}$$

$$x = 0.12$$

$$x = 12\%$$

b) The purchase price for a microwave oven is $235.99. A retail store offers a 35% discount. What is the discount amount? What is the new purchase price? **First, set up the equation using x to represent the unknown quantity. Then solve for x.**

$$\left(\begin{matrix}\text{Discount}\\ \text{Amount}\end{matrix}\right) = \left(\begin{matrix}\%\\ \text{Discount}\end{matrix}\right) \cdot \left(\begin{matrix}\text{Purchase}\\ \text{Price}\end{matrix}\right)$$

$$= (0.35)(235.99)$$

$$= \$82.60 \leftarrow \text{Discount Amount!}$$

$$\left(\begin{matrix}\text{New Purchase}\\ \text{Price}\end{matrix}\right) = \left(\begin{matrix}\text{Purchase}\\ \text{Price}\end{matrix}\right) - \left(\begin{matrix}\text{Discount}\\ \text{Amount}\end{matrix}\right)$$

$$= 235.99 - 82.60$$

$$= \$153.39 \leftarrow \text{New Purchase Price!}$$

12. Solve the following. **First, set up the equation using x to represent the unknown quantity. Then solve for x**. Round your final solution to the nearest tenth.

a) What percent of 60 is 36?

$x \cdot 60 = 36$

$\frac{60x}{60} = \frac{36}{60}$

$x = 0.6$

$x = 60.0\%$

b) 16% of what number is 41?

$0.16 \cdot x = 41$

$\frac{0.16x}{0.16} = \frac{41}{0.16}$

$x = 256.25$

$x = 256.3$

13. Answer the following questions. **First, set up the equation using x to represent the unknown quantity. Then solve for x. Round your solution to the nearest whole number.**

Recall: *The* $\left(\%\right)$ *of* $\left(\begin{matrix} a \\ total \end{matrix}\right)$ *is* $\left(\begin{matrix} a \\ portion \end{matrix}\right)$.

a) The total student population at a local community college is 56% female. If there are 17,358 enrolled at the college, how many female students attend this college. **Round your solution to the nearest whole number.**

$(0.56) \cdot (17,358) = x$

$9,720 = x$

Female Students

b) A farmer owns 56 acres of land. Of the 56 acres, only 65% can be farmed. How many acres are available for farming? **Round your solution to the nearest whole number.**

% · Total = Portion

$(0.65)\cdot(56) = X$

$36.4 = X$

36 Acres

c) An investor places $15,000.00 into a savings account. The interest rate is 5.75% compounded annually. How much money is in the savings account after two years? **Note:** $I = PRT$

1st Year:

$I = PRT$

$I = (15{,}000)(0.0575)(1)$

$I = 862.50$

Interest earned after 1st year

New Principal for 2nd year.

$15{,}000.00 + 862.50 = 15{,}862.50$

2nd Year: $I = PRT$

$I = (15{,}862.50)(0.0575)(1)$

$I = 912.09$ Interest earned after 2nd year.

After 2 years:

$15{,}862.50 + 912.09 = \$16{,}774.59$

d) An investor places $8,000.00 into a savings account. The interest rate is 5.75% compounded quarterly. How much money is in the savings account after four years? **Note:** $A = P\left(1 + \frac{r}{n}\right)^{nt}$

$A = 8{,}000\left(1 + \frac{0.0575}{4}\right)^{4\cdot 4}$

$A = 8{,}000\left(1.014375\right)^{16}$

$A = 8{,}000\,(1.2565)$

Note: This number is rounded to nearest ten-thousandths!

$A = \$10{,}052.00$