



Mathematics 52

Study Guide 1

Fall 2016

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Course ID: (27488) and (27501)

Student's Name:.....

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Note: This study guide contains practice questions that are very useful for your preparation for the first exam in Elementary Algebra.

Problem 1: Determine whether the following is TRUE or FALSE and if it is false EXPLAIN why:

a.  $5\frac{1}{6} = \frac{5}{6}$

b.  $2^{-1} + 2^0 + 2^{1--2} \ll 100^0 + e^0 + 22^{-1+2} + 1000^3$

c.  $-500.34 - -200.34 \geq -200.87$

d.  $\left| -\frac{20}{2} \right| < (-2)^5$

e.  $\frac{2x^4+x^3+x^2+2}{x^0+x\sqrt{64}} \geq \frac{0x^5+x^2+x^7+2}{x^0+x-\sqrt{4}}$  if given  $x = -1$

f.  $\pm 1.23 \leq \pm 1.23$

g.  $25^{-2} \geq 2.56$

h.  $0.\bar{3} - \frac{1}{3} > 0.012 - 0.091$

i.  $\frac{2^{-3+2+4-2} + \sqrt[3]{27} + \left(\frac{15}{5}\right)}{\left(\frac{40}{2}\right) - -|-20--10|} \geq \frac{\sqrt{121} - |- -23 - +20| + 64\left(\frac{1}{4}\right)^{\frac{1}{2}}}{2\sqrt{100} - \sqrt{100}}$

j.  $2^{0+2(25)^{\frac{1}{2}}} \gg 2^{0.5-1}$

**Problem 2:** Add the following using the NUMBER LINE:

a.  $-4 - -2$

b.  $-10 + -8$

c.  $-5 - 1 + 3 - 2$

d.  $-3.5 - -0.5$

e.  $+(-2) \cdot -(-1)^3 + -(-2 \cdot (-1)^{11})$

**Problem 3:** Determine which of the following is INCORRECT and EXPLAIN why:

a.  $\frac{1}{9} > 0.\bar{1}$

b.  $0.\bar{1}$  is irrational number

c.  $\mathbb{R} < \mathbb{Z}_{\geq 0}$

d.  $\frac{0}{1}$  is undefined

e.  $\frac{(\sqrt{x}-\sqrt{x}) \cdot (x-2)}{(\sqrt{x}-\sqrt{x})} = 0$

**Problem 4:** Write the general form for each of the following:

- a. Linear Equation
- b. Absolute Value
- c. Commutative Law of Addition
- d. Associative Law of Multiplication (Distribution Law)
- e. Additive Identity

**Problem 5:** Simplify (evaluate) the following mathematical expression:

a. 
$$\frac{\sqrt{81} - |-23 - +20| + 121 \left(\frac{1}{4}\right)^{\frac{1}{2}}}{6\sqrt{25} - \sqrt{25}}$$

b. 
$$\frac{2^{-3+2+5-2} + 2 \cdot (3 - -1 + 2) \cdot \sqrt[3]{27} + \left(\frac{15}{5}\right)}{\left(\frac{40}{2}\right) - -|-20 + 10|}$$

**Problem 6:** Solve the following:

a.  $\alpha^2 - (\alpha - 2)(\alpha - 5) - 18 = -6(4\alpha + 7)$

b.  $-\frac{7}{2}\mu + \frac{3}{2}(\mu - 6) = -3$

c.  $3\varphi + 7 > 7\varphi - 5$

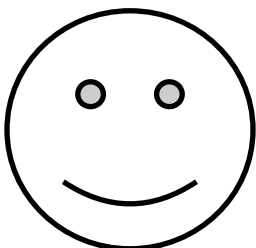
**Problem 7:** Solve the following real life application problems:

**Problem 7.1**

Laura rented a rectangular office space of length 90 ft and the width of the office space is one-third its length. Find the area of Laura's office space.

**Problem 7.2**

In Labor Day, Elias went to one of the Honda dealerships in California to buy a 2016 Honda Civic Coupe. The price of this car was listed as \$20,000. Elias is currently working in marketing in one of companies in California. A Labor Day discount of 10% on the price of this car, followed by another discount of 5% because he is working in a partner company of the Honda dealership, is equivalent to a single discount of what percent of the original price?



**We always learn from the challenging  
math problems.**

**Practice + Study = Success**

**Good Luck in Exam 1**

**Mohammed Kaabar**

