Name:_____ Date:_____

Foundations of Algebra: Unit 1 Study Guide

Topic 1: Integer operations

1) -3 − 5	2) 7 − -3	3) 17 + (-48)
4) -7 + 8	5) -6 − 6	6) 4(14)
7) -12 ÷ −2	8) 16(-2)	9) 100 ÷ -5

10)   A submarine is in the middle of the ocean at a depth of 115 feet. It descends for another 40 feet. How far under the surface of the water is the submarine?

11)   A roller coaster begins at 90 feet above ground level. Then is descends on its first drop by 105 feet. Find the height of the coaster after the first descer

Topic 2: Fraction operations: Leave all values as simplified fractions or as improper fractions (no mixed numbers!)

12) $\frac{52}{65}$	13) $\frac{4}{7} + \frac{2}{3}$
14) $6\frac{1}{8} + \frac{3}{8}$	15) $\frac{4}{5} \times \frac{6}{7}$
16) $\frac{5}{9} \div \frac{6}{7}$	17) $7\frac{5}{11}$
18) $\frac{16}{44}$	19) $\frac{2}{5} - \frac{6}{5}$
20) $\frac{12}{5} - 1\frac{1}{4}$	21) $\frac{2}{3} \cdot \frac{9}{5}$

<u>Topic 3: Decimals and Place value</u>
Round each number to the value indicated

22) 2.8325 to the thousandths	23) 5.70166 to the nearest whole number
24) 8.232 to the tenth	25) 9.937 to the hundredth
26) 3.83592 to the nearest whole number	27) 3.83592 to the tenth
28) 3.83592 to the hundredth	29) 3.83592 to the thousandth

30)   The oldest dog to have lived was an Australian cattle dog named Bluey. He lived to be 29 years an d 4 months. What is his age rounded to the nearest whole year?

31)   Completing tax forms require you to list exact dollar amounts however in Georgia, the amount is always rounded to the nearest dollar. If you made $345.12 last year how would you report this on your Georgia taxes? (meaning rounded to the nearest dollar)

<u>Topic 4: Rational v. irrational numbers</u>
For each determine if the number is rational or irrational

32) $5\frac{1}{2}$	33) $-\sqrt{64}$	34) $\sqrt{6}$
35) $\sqrt{9}$	36) 5.1	37) $\frac{7}{8}$
38) -4	39) $\sqrt{3}+17$	40) π

<u>Topic 5: Determining value</u>
<u>Place the numbers in order from least to greatest</u>

41)	0.05, 0.5, 0.025, 0.2
42)	1.15, 1.5, 2, 1.1
43)	5.1, 5.03, 5.29, 5.67

<u>Fill in the blank with the appropriate symbol (<, >, or =)</u>

44)	0.5____$\frac{6}{7}$	45)	$\sqrt{4}$____2
46)	15.1____15.01	47)	0.8____$\frac{2}{25}$
48)	-3____5	49)	$\frac{1}{10}$____$\frac{1}{100}$
50)	16____$\frac{32}{2}$	51)	$\frac{1}{16}$____16

<u>Place the values on the number line with indicated letter</u>

52) A=4.5	53) B=$-5\frac{1}{2}$	54) C = $\sqrt{36}$	55) D= 0.5	56) E= -1.5	57) F=$-\frac{16}{4}$

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   -6   -5   -4   -3   -2   -1    0    1    2    3    4    5    6
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