

Name: \_\_\_\_\_

Test #1b - Review & Chapter 1  
Beginning Algebra  
Fall 2009

**Instructions:** Put your name on your paper before you begin. You may not use a calculator on this test. All work must be shown in order to receive all points for all questions. If you use extra paper to show work, please tell me where to find additional work each time that you use it and label your work clearly so that I may easily find it! Please **box your final answer**. Any answer that is a fraction must be in lowest terms and as mixed number for full credit. Staple your note card to the back of your test. Good luck!

1. Find the prime factorization for the following. Factorization must be written as a product to receive full credit.

a) (1)

48

product #s

b) (1)

36

product #s

1/2 Credit for primes, but not when asked for.

2. Find the LCD of 48 and 36. Prime factorization must be used for full credit.

LCD =  $2^4 \cdot 3^2 = 144$

3. Add the following. Make sure that your final answer is completely simplified, including being changed to a mixed number if necessary.

$\frac{11}{48} + \frac{5}{36}$

Handwritten work for problem 3 showing common denominator and addition steps.

4. Multiply/Divide using decimals. Give each answer as a decimal. If it is repeating, do not round show the bar over the repeating number(s).

a) (1)

$(1.8)(0.007)$

Handwritten work for (1.8)(0.007) showing multiplication and decimal placement.

b) (1 1/2)

$1.08 \div 3$

Handwritten work for  $1.08 \div 3$  showing division steps.

c) (1 1/2)

$168 \div 60$

Handwritten work for  $168 \div 60$  showing division and simplification.

d) (1)

$(0.09)^2$

Handwritten work for  $(0.09)^2$  showing squaring of the decimal.

e) (1 1/2)

$1.27 \div 3$

Handwritten work for  $1.27 \div 3$  showing division and repeating decimal.

Handwritten note: # dec order bar

Handwritten circled answer:  $12 \frac{1}{2}$

5. Find the answers to the following fraction problems (using fractions) and then give the answers **in lowest terms and/or as a mixed number.**

a)  $5\frac{1}{5} + 2\frac{4}{15}$   
 $= \frac{3}{15} + \frac{4}{15}$   
 $= \frac{7}{15}$   
 $2\frac{7}{15}$

b)  $1\frac{1}{4} \cdot 1\frac{1}{4}$   
 $= \frac{5}{4} \cdot \frac{5}{4} = \frac{25}{16}$   
 $1\frac{9}{16}$

c)  $\frac{5}{6} \div 4\frac{2}{3}$   
 $= \frac{5}{6} \cdot \frac{3}{14} = \frac{5}{14}$   
*cancel out reduce 1/2*

d)  $25 - \frac{8}{15}$   
 $24\frac{15}{15} - \frac{8}{15} = 24\frac{7}{15}$

e)  $28 + \frac{22}{29}$   
 $28\frac{22}{29}$

f)  $458\frac{11}{239} - 237\frac{17}{239}$   
 $458 - 237 = 221$   
 $\frac{11}{239} - \frac{17}{239} = -\frac{6}{239}$   
 $221 - \frac{6}{239} = 220\frac{233}{239}$

g)  $3205\frac{256}{257} + 1529\frac{5}{257}$   
 $3205 + 1529 = 4734$   
 $\frac{256}{257} + \frac{5}{257} = \frac{261}{257}$   
 $4734\frac{261}{257}$

6. Simplify completely. If an answer is a fraction make sure to answer in lowest terms and as a mixed number where necessary. Show all work for all steps. Use only strict order of operations.

a)  $\frac{7[4^2 - 2] - 8}{2(3)^4 - 9(2^3)}$   
 $= \frac{7[16 - 2] - 8}{2(81) - 9(8)}$   
 $= \frac{7(14) - 8}{162 - 72} = \frac{98 - 8}{90} = \frac{90}{90} = 1$

b)  $5 + 4[2^4 + 42 \div 3] - 13$   
 $= 5 + 4[16 + 14] - 13$   
 $= 5 + 4(30) - 13$   
 $= 5 + 120 - 13 = 112$

If they did  $(2 \cdot 3)^4 = 12^4 = 20736$   
 Gets  $\frac{45}{62} = \frac{5}{62}$

c)  $12 + 3 \cdot 16$   
 $12 + 48 = 60$

d)  $90 - 6(5 + 4)$   
 $90 - 6(9) = 90 - 54 = 36$   
 Net  $90 - 6 \Rightarrow$  Answer is 756

7. Evaluate:  $ax - b \div c$  if  $a = \frac{1}{2}, b = \frac{3}{7}, c = \frac{1}{3}, x = 9$

$\left(\frac{1}{2}\right) \cdot 9 - \frac{3}{7} \div \frac{1}{3} = \frac{9}{2} - \frac{3}{7} \cdot \frac{3}{1} = \frac{9}{2} - \frac{9}{7} = \frac{63}{14} - \frac{12}{14} = \frac{51}{14}$   
 Substitute +2

+31

8. Compare using  $<$ ,  $>$  or  $=$ . You must show the work in arriving at 2 numbers to compare in order to receive full credit.

a)  $\frac{+1}{+1}$

$-(-15) > -15$

b)  $\frac{+1}{+1}$

$-5.308 > -5.38$

$+3\frac{1}{2}$

c)  $\frac{+1}{+1}$

$0.29 > 0.19$

d)  $\frac{+1}{+1}$

$-\frac{10}{51} < -\frac{5}{27}$

e)  $\frac{+1}{+1}$

$-27 > -45$

f)  $\frac{+1}{+1}$

$\frac{10}{51} > \frac{5}{27}$

9. Complete the following table. Show work for conversions. No rounding & all fractions must be reduced.

Fraction	Decimal	Percentage
$\frac{2}{9}$		
$\frac{5}{8}$	0.625	
$\frac{3}{4}$	0.75	75%

$+5$

10. Match each of the following properties with the example that best exhibits the property. (Write the letter of the property on the line beside the example that best shows it.)

B  $2(x + 5) \cdot 100 = 2 \cdot 100(x + 5)$

- a) Commutative Prop. of Addition
- b) Commutative Prop. of Mult.
- c) Distributive Prop.
- d) Associative Prop. of Addition
- e) Associative Prop. of Mult.
- f) Inverse of Addition
- g) Inverse of Multiplication
- h) Identity of Addition
- i) Identity of Multiplication

D  $(5 + 2) + 1 = 5 + (2 + 1)$

F  $-6 + 0 = -6$

C  $\frac{1}{5}(5 + m) = 1 + \frac{1}{5}m$

G  $5 \cdot \frac{1}{5} = 1$

11. For each of the following give the correct answer:

- a)  $0 \div 54$
- b)  $6,851 \div 0$
- c)  $710 \cdot 0$

$+2\frac{1}{2}$

$+3$

$+14$

For each of the following circle only one answer. There is only 1 correct answer.

12. Circle the number that is a **rational** number and a **real** number.

- a)  $\sqrt{5}$       b)  $-1\frac{1}{2}$       c)  $-\pi$       d)  $\sqrt{3}$

13. Circle the list of **all** the **integers** in the following set:  $\{-4, \sqrt{2}, 0, \pi, \frac{12}{3}, 14\}$

- a)  $\sqrt{2}, \pi$       b)  $\sqrt{2}, \pi, \frac{12}{3}$       c)  $-4, 0, \frac{12}{3}, 14$       d)  $-4, 0, 4$

14. Circle the reciprocal/multiplicative inverse of:  $\frac{5}{2}$ .

- a)  $-\frac{2}{5}$       b)  $\frac{2}{5}$       c)  $-\frac{5}{2}$       d)  $\frac{5}{2}$

15. Circle the opposite/additive inverse of:  $\frac{5}{2}$ .

- a)  $-\frac{5}{2}$       b)  $-\frac{2}{5}$       c)  $\frac{5}{2}$       d)  $\frac{2}{5}$

16. Circle the number that is a **natural** number, an **integer**, a **rational** number and a **real** number.

- a)  $\frac{5}{4}$       b)  $2$       c)  $\sqrt{5}$       d)  $-6$