



Washtenaw Community College

What You Should Know To Place Into MTH 067

Introduction: This document is intended to help you prepare to take the COMPASS test and place into *MTH 067: Foundations of Mathematics*. If you wish to place into MTH 067, you should be able to complete most of the problems below correctly. The answers to these problems can be found at the bottom of the last page of this document.

If you need to review any of these math concepts, a webpage has been created to help you brush up on the material. The address for the MTH 067 placement webpage is:

http://sites.google.com/site/jasondavis48108/mth067_placement

Studying for the COMPASS math test before you take it will help you ensure that you are placed into a course that is at the right level for you. If you go through the sample questions below and the free Google site above but feel you still need to work on your math skills before you retake COMPASS, try the online tutorial *Get Ready for WCC Math!* For more information on this interactive, self-paced tutorial, its cost, and how to sign up, [go to the last page of this PDF](#).

Note: It is strongly advised that you DO NOT take the math portion of COMPASS on the same day as orientation. It is further advised that you do not take the math portion of the COMPASS test on the same day that you take the reading or writing portions of the COMPASS test. However, you must take the COMPASS math test in order to complete the application process (unless WCC has your ACT or SAT scores.)

1) You should know how to add, subtract, multiply, and divide integers.

Example problems:

Addition

(a) $8 + (-5)$ (b) $(-17) + (-12)$ (c) $-19 + 7$

Subtraction

(d) $-9 - (-12)$ (e) $23 - (-13)$ (f) $-18 - (-32)$

Multiplication

(g) $(-7)(-12)$ (h) $(-12)(8)$ (i) $(8)(-9)$

Division

(j) $(-48) \div 6$ (k) $\frac{-144}{12}$ (l) $\frac{-84}{-14}$

2) You should know how to simplify expressions with integers using the correct order of operations.

Example problems:

(a) $12 - (-3 - 8) = ?$ (b) $-3 - 5 + 8 + 4(-5) + 18 = ?$ (c) $\frac{(-3)(6) + [7 - (-3)]}{(-2)[8 + (-10 + 1)]} = ?$

3) You should know how to solve applications involving integers.

Example problems:

(a) On a certain day in January the high temperature was $-7^{\circ}F$ in Ann Arbor Michigan, and on that same day the high temperature was $84^{\circ}F$ in San Diego California. What was the difference in the high temperatures, in degrees Fahrenheit, between the two cities on that day?

(b) James is bringing his checkbook up to date. He has written a check for \$3 and accidentally adds this amount to his current balance instead of subtracting it. Which of the following is true about his record of his balance after he has made the error?

- a. It is smaller than it should be by \$3
- b. It is larger than it should be by \$3
- c. It is smaller than it should be by \$6
- d. It is larger than it should be by \$6

4) You should know how to add, subtract, multiply and divide fractions and mixed-numbers.

Example problems:

Addition

(a) $\frac{5}{12} + \frac{3}{16}$ (b) $2\frac{3}{8} + 5\frac{4}{12}$ (c) $\frac{7}{32} + 2\frac{5}{12}$

Subtraction

(d) $\frac{15}{36} - \frac{1}{12}$ (e) $7\frac{3}{8} - 2\frac{5}{7}$ (f) $8 - \frac{3}{7}$

Multiplication

(g) $\frac{4}{15} \cdot \frac{5}{12}$ (h) $2\frac{2}{3} \cdot \frac{6}{8}$ (i) $\frac{3}{4} \cdot 48$

Division

(j) $\frac{7}{8} \div \frac{2}{14}$ (k) $\frac{3}{5} \div 6$ (l) $12 \div \frac{2}{3}$

5) You should know how to simplify expressions involving fractions using the correct order of operations.

Example problems:

$$(a) \frac{5}{6} + \frac{2}{3} \cdot \frac{3}{4} - \frac{1}{4} \quad (b) \frac{\frac{5}{6} - \frac{2}{3}}{3 - \frac{1}{3}} \quad (c) \frac{5 - \frac{1}{4}}{5 + \frac{1}{4}}$$

6) You should know how to solve applications involving fractions.

Example problems:

(a) A recipe calls for $\frac{3}{4}$ cup of diced tomatoes. Which of the following calculations gives the number of cups of diced tomatoes that should be used to make $\frac{1}{2}$ of this recipe?

a. $\frac{1}{2} + \frac{3}{4} = 1\frac{1}{4} \text{ cup}$

b. $\frac{1}{2} \cdot \frac{3}{4} = \frac{3}{8} \text{ cup}$

c. $\frac{3}{4} - \frac{1}{2} = \frac{1}{4} \text{ cup}$

d. $\frac{1}{2} \div \frac{3}{4} = \frac{2}{3} \text{ cup}$

(b) Two-thirds of 1 hour 48 minutes is equal to how many hours?

7) You should be able to add, subtract, multiply, and divide decimals.

Example problems:

Addition

$$(a) 3.004 + 0.05 \quad (b) \$5.85 + \$13.07 \quad (c) 0.0078 + 0.09$$

Subtraction

$$(d) 0.7 - 0.003 \quad (e) 5.4 - 0.008 \quad (f) 2.1 - 0.0006$$

Multiplication

$$(g) 2.4 \cdot 0.05 \quad (h) 3.2 \cdot 4.12 \quad (i) 0.056 \cdot 100$$

Division

$$(j) 6.4 \div 0.08 \quad (k) 54 \div 1.8 \quad (l) 32 \div 5$$

8) You should know how to simplify expressions involving decimals using the correct order of operations.

Example problems:

(a) $2.4 + 1.6 \div 0.04$

(b) $9 \cdot 7.2 - 4.8 \div 0.6$

(c) $\$4.58 - \$2.79 + \$3.02 - \0.64

9) You should know how to solve applications involving decimals.

Example problems:

(a) What will it cost to tile a bathroom floor that is 9 feet wide by 12 feet long if the tile cost \$3.98 per square yard?

(b) If edging cost \$1.58 per 12-inch stone, and you want a double layer of edging around your flower bed that is 8 yards by 1 yard. How much will edging your flowerbed cost?

Answers to practice problems:

1) (a) **3** (b) **-29** (c) **-12** (d) **3** (e) **36** (f) **14** (g) **84** (h) **-96** (i) **-72**
(j) **-8** (k) **-12** (l) **6**

2) (a) **23** (b) **-2** (c) **-4**

3) (a) **91 degrees Fahrenheit** (b) **d. It is larger than it should be by \$6**

4) (a) $\frac{29}{48}$ (b) $7\frac{17}{24}$ (c) $2\frac{61}{96}$ (d) $\frac{1}{3}$ (e) $4\frac{37}{56}$ (f) $7\frac{4}{7}$ (g) $\frac{1}{9}$ (h) **2** (i) **36**

(j) $6\frac{1}{8}$ (k) $\frac{1}{10}$ (l) **18**

5) (a) $1\frac{1}{12}$ (b) $\frac{1}{16}$ (c) $\frac{19}{21}$

6) (a) b. $\frac{1}{2} \cdot \frac{3}{4} = \frac{3}{8}$ *cup* (b) $1\frac{1}{5}$ *hours*

7) (a) **3.054** (b) **18.92** (c) **0.0978** (d) **0.697** (e) **5.392** (f) **2.0994**

(g) **0.12** (h) **13.184** (i) **5.6** (j) **80** (k) **30** (l) **6.4**

8) (a) **42.4** (b) **56.8** (c) **\$4.17**

9) (a) **\$47.76** (b) **\$170.64**