EXAM 3 - MTH 125-101 (CT) FALL 2010

MTH 125-101
12 November 2010
Instructor: Thomas Cuchta
Total Points: 100 (14 points for each question + 2 free) Name: _____

Read the following before starting the exam:

- Show all work, clearly and in order, if you want full credit. I reserve the right to take off points if I cannot see how you arrived at your answer (even if your final answer is correct).
- Justify your answers as much as possible to ensure full credit.
- Partial credit will be awarded for incomplete answers.
- ***Circle or otherwise indicate your final answers.***
- Please keep your answers brief; be clear and to the point.
- Good luck!

You are required to do ***ONLY eight*** out of the following ten problems!

Check in the table below the problems you want me to grade -- if you check nothing I will grade the first seven problems. If you check more than 8, I will grade the first 8 checked.

Problem Number	Grade it?
Problem 1	
Problem 2	
Problem 3	
Problem 4	
Problem 5	
Problem 6	
Problem 7	
Problem 8	
Problem 9	
Problem 10	

1.) Compute and simplify

a.) $3/4 + 7/10 =$ _____

b.) $(- 11/12) \times (2/3) =$ ____

c.) $(- 3/4) \div (- 2/7) =$ _____

2.) Simplify

a.) $3^4 \times 3^{-2}$

b.) 5^1+5^2

c.) $2^5 \div 2^2$

3.) Fill out the second table. Do so by matching the given property to a property that appears in the first table. There are many more choices than answers, and only one answer goes into each blank.

First table (these are your choices for the second table)

Closure property of addition	A
Closure property of multiplication	B
Commutative property of addition	C
Commutative property of multiplication	D
Associative property of addition	E
Associative property of multiplication	F

Identity property of addition	G
Identity property of multiplication	H
Inverse property of addition	I
Inverse property of multiplication	J
Distributive property of multiplication over addition	K

Second table

a(b+c) = ab + ac	
ab = ba	
a + (-a) = 0	
a + 0 = a	
a + b = b + a	
a × (1/a) = 1	

4.) Evaluate the expression for the given value or values of the variable and simplify.

a.) $3x - 10 ; x = 50$

b.) $x^2 + 5x + 1 ; x = 4$

b.) $(2/3)x + 5/x ; x=3$

5.) Solve each equation

a.) $-3z = 36$

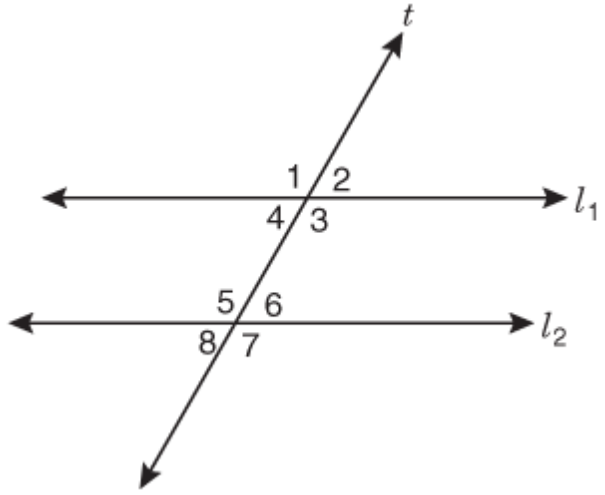
b.) $3 + 2(m + 1) = 5 + 6(2m - 1)$

c.) x/4 + 3 = x/5 + 2

6.) a.) The American Dietetic Association reported that 31 out of every 100 people want to lose weight. If 384 students were surveyed at random in the student center, how many would want to lose weight?

b.) If five small cans of paint can cover 20 square feet of wood siding, how many cans of paint should be purchased to cover 13.5 square feet of siding?

7.) From the diagram below, identify the relationship each given pair of angles have.



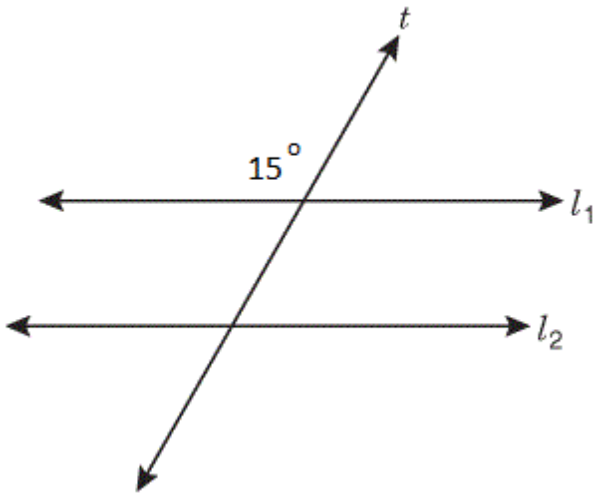
a.) Angle 1 and Angle 5

b.) Angle 4 and Angle 2

c.) Angle 1 and Angle 6

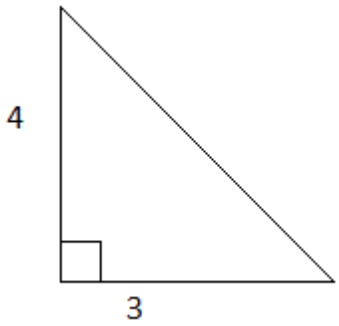
d.) Angle 5 and Angle 3

8.) Determine and fill in all remaining angles in the diagram.

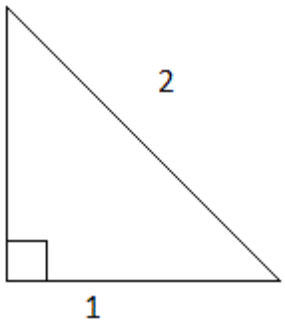


9.) Find the missing angle in each situation.

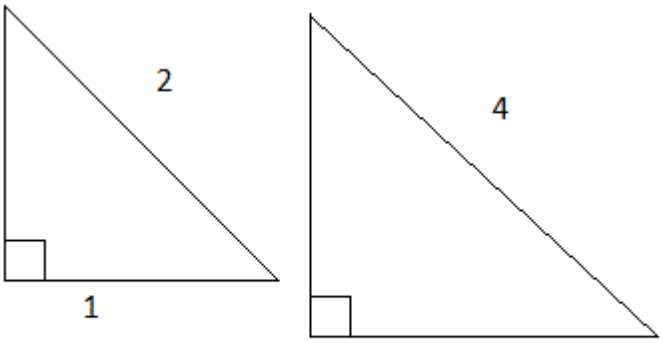
a.) Find the hypotenuse.



b.) Find the missing left side.

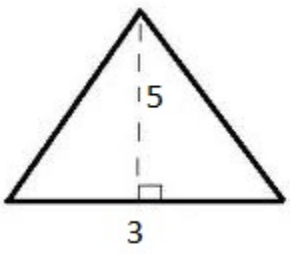


c.) For this part, suppose these two triangles are similar. Find all three missing sides from each.

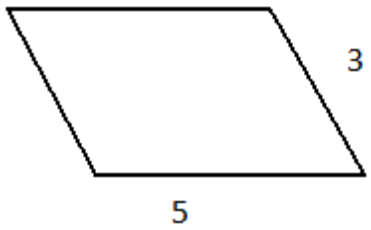


10.) Find the area of the given figure.

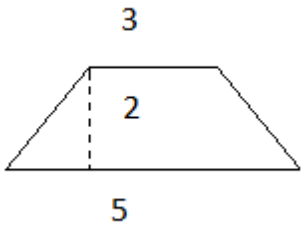
a.) Triangle



b.) Parallelogram



c.) Trapezoid



EXTRA CREDIT (worth 3 points each)

1. Prove that vertical angles have the same measure.

2. Prove that the sum of angles in a triangle equals 180 degrees.

3. State and prove the Pythagorean Theorem.