EXAM 3 - MTH 099 INTERSESSION 2011

MTH 099 ()
27 May, 2011

Name:

Read all of the following information before starting the exam:

- On the next page, choose 9 of the following 11 eleven problems for me to grade. If you mark more than 9, I will grade the first 9 marked. If you mark less than 9, then I will grade 9 total problems starting with those checked and then start with the first blank ones until I reach 9.

- Show all work, clearly and in order, if you want to get 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 algebraically whenever possible to ensure full credit. When you do use your calculator, sketch all relevant graphs and explain all relevant mathematics.

- Circle or otherwise indicate your final answers.

- Please keep your written answers brief; be clear and to the point.

- Good luck!

Problem Number	Grade?
1	
2	
3	
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7	
8	
9	
10	
11	

1. (*11 points*) Solve the equation.

    (**a**) $3x + 1 = 7$

    (**b**) $11 - (2w + 1) = 3[(4w + 5) - (w + 1)]$

2. (*11 points*) Identify each equation as conditional, contradiction, or identity.

    (**a**) $3(z + 1) = 9 + 3z$

    (**b**) $2q + 3 = 2(q - 1) + 5$

3. (*11 points*) Solve the equation.

    (**a**) $\frac{2}{3}x + 2 = 1$

    (**b**) $5.2w + 2.1 = 1$

4. (*11 points*) A manager wants to separate 36 employees into two teams. One team has four fewer members than three times the other team. How many employees are there in each team?

5. (*11 points*) Answer each question.

(**a**) If x represents the first of two consecutive integers, write an expression representing the second integer.

(**b**) If x represents the first of three consecutive odd integers, write expressions representing the second and third integers.

6. (*11 points*) The total cost (including tax) of a pack of gum is 1.53 dollars. If the sales tax rate is 6 percent, what was the cost of the gum before the tax?

7. (*11 points*) Solve for the indicated variable.

    (**a**)   Solve $3x - 2w = 9$ for w.

    (**b**)   Solve $A = \pi r^2$ for π.

8. (*11 points*) Solve each problem.

    (**a**)   The perimeter of a rectangular garden is 16 ft. The length is 3 ft more than the width. Find the length and the width of the garden.

    (**b**)   The largest angle in a triangle is five times the smallest angle. The middle angle is three times the smallest angle. Given that the sum of the angles in a triangle is 180 degrees, find the measure of each of the three angles in the triangle.

9. (*11 points*) Sketch a graph of the given line by finding two points on it and labelling them appropriately.

    (**a**) $y = 2x + 1$

    (**b**) $x = 5$

10. (*11 points*) Find the x-intercept and the y-intercept of each line.
  (**a**) $2x + 3y = 4$

  (**b**) $4x + 3y = 2$

11. (*11 points*) Find the slope of the line between the two points.
  (**a**) $(-2, 4)$ and $(1, 6)$

  (**b**) $(-6, -1)$ and $(1, 1)$