Final **Practice** exam Math 099 Summer ‘14

For the exam, you will need to show all work and justify answers with work when appropriate. No justification may cause answer to receive no credit.

1. (2.1) Write the expression in simpler form.
2. (2.2) Simplify each expression:
3. (2.3) Expand and combine like terms
4. (2.3) Factor the expressions:
   1. + 11xy + 24
5. (2.4) Write the following as a single fraction:

1. (3.1) Solve the equations:
2. (3.2) Solve the inequalities:
3. (3.3) Solve the absolute value equation by writing it as two separate equations.
4. (3.3) Solve the absolute value inequality by writing it as two separate equations.
5. Solve each absolute value inequality by writing it as two separate inequalities. Be sure to include **AND** or **OR** to indicate the correct solution set. Drawing a number line and testing values to check your work may be helpful, but is not required.
6. (4.1) Write the relationship using function notation is a function of is written
   1. The number, N, of napkins used in a restaurant is , where is the number of customers.
      1. What is the dependent variable?
      2. What is the independent variable?
7. (4.1) Let . Evaluate
8. (4.2) Are the two functions the same function?
   1. and
   2. and
9. (4.3) For accounting purposes, the value of a machine, years after it is purchased, is given in dollars by .
   1. Write an equation whose solution is the number of years it takes for machine’s value to reach $70,000.
10. (4.4) Find the average rate of change of on the following intervals.
    1. Between 2 and 4
    2. Between -2 and 4
    3. Between -4 and -2
11. (5.2) Find a possible formula for the linear function if and
12. (5.2) For working hours a week, where , a personal trainer is paid in dollars
    1. What is the practical meaning of the 500 and the 18.75?
13. (5.3) Solve the following linear equations. Explain your results.
14. (5.4) Graph the following equations:
    1. 3
15. (5.4) Write an equation in **point-slope** form for the line.
    1. Through (2,3) with a slope of
    2. Through (4,7) and (1,1)
    3. Through (-1,-8) and parallel to
    4. Through (12,20) and perpendicular to
16. (5.5) Could the table represent the values of a linear function? Give a formula if it could.

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| *X* | 0 | 2 | 10 | 20 |
| *Y* | 50 | 58 | 90 | 130 |

1. Solve the systems of equations using substitution or elimination. Show all work.