

MATH 107 QUIZ 1

August-September, 2016 Instructor: S. Sands

NAME: _____

I have completed this assignment myself, working independently and not consulting anyone except the instructor.

INSTRUCTIONS

- The quiz is worth 100 points. There are 12 problems. This quiz is *open book* and *open notes*. This means that you may refer to your textbook, notes, and online classroom materials, but ***you must work independently and may not consult anyone*** (and confirm this with your submission). You may take as much time as you wish, provided you turn in your quiz no later than **Sunday, September 4**.
- **Show work/explanation where indicated. Answers without any work may earn little, if any, credit.** You may type or write your work in your copy of the quiz, or if you prefer, create a document containing your work. Scanned work is acceptable also. **In your document, be sure to include your name and the assertion of independence of work.**
- General quiz tips and instructions for submitting work are posted in the Quizzes module.
- If you have any questions, please contact me by e-mail.

1. (10 pts) Consider the interval $[0, \infty)$. For each numerical value below, is it in the interval or not?
(Just answer Yes or No)

$\frac{0}{8}$ _____ -5.5×10^9 _____ 3^{-7} _____ -2^4 _____ $|-2.3|$ _____
(Yes or No) (Yes or No) (Yes or No) (Yes or No) (Yes or No)

2. (4 pts) Write the interval notation corresponding to the set notation $\{x \mid x \leq 5\}$.

3. (7 pts) Perform the indicated operations and simplify: $(4^{-1} - 6^{-1})^{-2}$. Show work.

4. (8 pts) Perform the indicated operations and simplify: $\frac{(-20)^2 \times 5^{-3}}{2^7 \times 6^{-2}}$ Show work.

Note: \times is a multiplication symbol here, not a variable.

5. (8 pts) Solve the absolute value inequality $|8x - 3| \leq 13$. Show work. Write interval notation for the solution set.

6. (8 pts) Solve the absolute value inequality $|9 - 4x| \geq 21$. Show work. Write interval notation for the solution set.

7. (9 pts) Simplify: $\sqrt{500} - \sqrt{45} + \sqrt{80x^2}$ Show work. Give the exact answer (including a radical).

8. (10 pts) Factor. (Work *not* required to be shown).

(a) $36x^2 - 49$

(b) $14x^2 - 3x - 5$

9. (12 pts) Perform the indicated operations and simplify to get a polynomial:

$(6x - 5)^2 - (8x + 1)(3x + 2)$ Show work.

10. (8 pts) Solve the equation $x(x - 3) = 4(x + 2)$. **Show work.**

11. (8 pts) Solve the equation $3(6 - x) = 6 - 9(x + 8)$. **Show work.**

12. (8 pts) Simplify: $\frac{1}{x-7} - \frac{8}{x^2-6x-7}$. Show work.