

M123-Intermediate Algebra

Review for sections 9.2 & 9.4

Note: This review sheet was created to review the concepts presented in your text. Each instructor may have other problems you should review to prepare for quizzes and exams in your section of the course.

1. Explain the differences between the \cap symbol and the \cup symbol. Give an example of how each could be used when working with sets and set notation. (Section 9.2)
2. Solve for x . Write the solution set in set-builder notation, interval notation, and graph. (Section 9.2)
 - a) $x - 6 > 5$ OR $x + 5 \leq 11$
 - b) $2 < x + 3$ AND $x + 1 \leq 5$
 - c) $g(x) < -7$ OR $g(x) > 7$, where $g(x) = 3x + 5$.
 - d) Find the value of x if $-4 \leq f(x) \leq 15$, where $f(x) = 2x + 3$.
3. Find the domain for each of the following. (Section 9.2)
 - a) $f(x) = \frac{x+4}{3x+2}$
 - b) $h(x) = \sqrt{6-7x}$
4. Graph each of the following inequalities. (Section 9.4).
 - a) $y \geq \frac{2}{3}x - 4$
 - b) $3x - 5 \geq 7x + y$
5. Graph each system of inequalities. Find the coordinates of any vertices formed. (Section 9.4)
 - a) $2y - x \leq 2$
 $y - 3x \geq -4$
 $y \geq -1$
 - b) $3x + 4y \geq 12$
 $5x + 6y \leq 30$
 $1 \leq x \leq 3$