University of Calgary
Faculty of Science
Department of Mathematics and Statistics

Math 249 Fall 2009

Worksheet 1 (Inequalities) Answers

Answer Key:

1a. $S = [1, \infty)$

1b. $S = \left(-\frac{1}{2}, \frac{5}{6}\right]$

1c. $S = (-2, -1] \cup \left(\frac{1}{3}, \frac{2}{3}\right]$

1d. $S = (-\infty, 1) \cup (2, \infty)$

1e. $S = (-2, -1) \cup (1, 2)$

1f. $S = [-2, 1) \cup (1, 2) \cup (2, 3]$

2a. $S = \left(-\infty, -\frac{1}{2}\right) \cup \left(\frac{7}{2}, \infty\right)$

2b. $S = (-\infty, -7] \cup \left[-\frac{1}{5}, \infty\right)$

2c. $S = \varnothing$

2d. $S = \left\{x \in \mathbb{R}: x \neq -\frac{1}{3}\right\} = \left(-\infty, -\frac{1}{3}\right) \cup \left(-\frac{1}{3}, \infty\right).$

2e. $S = (-\infty, -2] \cup \left[\frac{4}{3}, \infty\right)$

2f. $S = [1, \infty)$

2g. $S = \left(-\infty, -\frac{1}{5}\right]$

3a. $Dom\ f = [-4, 4]$

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3b. $Dom\ f = (-\infty, -4] \cup [4, \infty)$

3c. $Dom\ f = (-\infty, 0) \cup (0, \infty)$

3d. $Dom\ f = [0, \infty)$

3e. $Dom\ f = \mathbb{R}$

3f. $Dom\ f = \left(-\infty, \frac{2}{3}\right) \cup \left(\frac{2}{3}, \infty\right)$