Student: _____ **Instructor:** Fouad Khoury **Assignment:** Quiz 1.7
Date: _____ **Course:** Math-1314

1. Solve the absolute value inequality. Write the solution set using interval notation.

$|2x - 3| \geq 1$

- **A.** $(-\infty, -2] \cup [1, \infty)$
- **B.** $[1, 2]$
- **C.** $[2, \infty)$
- **D.** $(-\infty, 1] \cup [2, \infty)$

2. Solve the absolute value inequality. Write the solution set using interval notation.

$|4x + 5| < 8$

- **A.** $\left(-\infty, -\frac{13}{4}\right) \cup \left(\frac{3}{4}, \infty\right)$
- **B.** $(-\infty, 4)$
- **C.** $\left(-\frac{13}{4}, \frac{3}{4}\right)$
- **D.** $\left(-\infty, -\frac{13}{4}\right)$

3. Solve the following inequality.

$-\frac{1}{4}x \geq -\frac{3}{8}$

Select the correct choice below and fill in the answer box to complete your choice.

- **A.** The solution set is $\{x|x < \_\_\_\_\_\}$.
- **B.** The solution set is $\{x|x > \_\_\_\_\_\}$.
- **C.** The solution set is $\{x|x \geq \_\_\_\_\_\}$.
- **D.** The solution set is $\{x|x \leq \_\_\_\_\_\}$.

4. Solve the following inequality.

$4x - \frac{5}{16} \leq \frac{3}{16} + 3x$

Select the correct choice below and fill in the answer box to complete your choice.

- **A.** The solution set is $\{x|x \geq \_\_\_\_\_\}$.
- **B.** The solution set is $\{x|x > \_\_\_\_\_\}$.
- **C.** The solution set is $\{x|x \leq \_\_\_\_\_\}$.
- **D.** The solution set is $\{x|x < \_\_\_\_\_\}$.

5. Solve the following inequality.

$4(8-2x)+2x<5(9+3x)$

Select the correct choice below and fill in the answer box to complete your choice.

- **A.** The solution set is $\{x|x>$ _____ $\}$.
- **B.** The solution set is $\{x|x\leq$ _____ $\}$.
- **C.** The solution set is $\{x|x<$ _____ $\}$.
- **D.** The solution set is $\{x|x\geq$ _____ $\}$.

6. For the function $g(x)=\dfrac{x-5}{x+4}$, solve $g(x)<0$

- **A.** $(-4,5)$
- **B.** $(5,\infty)$
- **C.** $(-\infty,-4)\cup(5,\infty)$
- **D.** $(-\infty,-4)$

7. For the function $g(x)=\dfrac{x-5}{x+4}$, solve $g(x)>0$.

- **A.** $(5,\infty)$
- **B.** $(-4,5)$
- **C.** $(-\infty,-4)$
- **D.** $(-\infty,-4)\cup(5,\infty)$

8. Solve the given inequality.

$x^2-4x-21<0$

- **A.** $(-\infty,-3)\cup(7,\infty)$
- **B.** $(7,\infty)$
- **C.** $(-\infty,-3)$
- **D.** $(-3,7)$

9. Solve the given inequality.

$x^2+8x+16\leq 0$

- **A.** $[4,\infty)$
- **B.** $(-\infty,-4]\cup[-4,\infty)$
- **C.** $\{-4\}$
- **D.** $\{4\}$

10. Solve the given inequality.

$x^2 - 10x + 23 \geq 0$

- **A.** $(-\infty, 5-\sqrt{2}] \cup [5+\sqrt{2}, \infty)$
- **B.** $[5-\sqrt{2}, 5+\sqrt{2}]$
- **C.** $(-\infty, 5-\sqrt{2}) \cup (5+\sqrt{2}, \infty)$
- **D.** $(-\infty, -\sqrt{2}] \cup [\sqrt{2}, \infty)$

11. Solve the given inequality.

$x^3 + 5x^2 - 9x - 45 \geq 0$

- **A.** $[-5, \infty)$
- **B.** $[-3, 3] \cup [5, \infty)$
- **C.** $[-5, -3] \cup [3, \infty)$
- **D.** $[-5, 3]$

12. List the critical values of the related function. Then solve the inequality.

$\frac{-3}{-2x-5} > 0$

- **A.** 0; $(0, \infty)$
- **B.** $-\frac{2}{5}; \left(-\infty, -\frac{2}{5}\right)$
- **C.** $-\frac{5}{2}; \left(-\frac{5}{2}, \infty\right)$
- **D.** $\frac{5}{2}; \left(-\infty, \frac{5}{2}\right)$