

**Unit 6:
Cumulative Review**

1. Solve $3x - 5(x - 2) = x + 1$

2. Simplify $1/3 - 3/4 - 7/8$

3. Simplify $|-5 - 3 + 1| - 6$

4. Solve $-3x - 2 < x + 1$ and show the answer both algebraically and on a number line.

5. Plot the point $(6, -5)$ on a coordinate plane and locate its reflection across the y -axis.

6. If $h(x) = -3x^2 + x - 11$, find $h(-2)$.

7. Draw a mapping for the relation represented by these ordered pairs:
 $\{ (-2, 4), (4, 8), (-2, 1), (9, 6) \}$

8. Give the domain and range for the relation in problem 7. Is it a function? Why?

9. Draw a coordinate plane and label the quadrants. In which quadrant are both the x and y-coordinates negative?

10. A balloon initially filled with 3 Liters of air is leaking air at the rate of .03 liters/minute. Write an expression for the L , the number of liters, at some later time, t , in minutes.

11. From problem 10, how many liters of air are left in the balloon after 15 minutes?

12. If the domain of $f(x) = 4x - 2$ is $\{-2, 1, 3, 4, 5, 6\}$, what is the range?

13. If $g(x) = 8x - 2$ and $h(x) = x + 1$, find $2h(3) - 8g(7)$.

14. The width of a rectangle is 6 meters less than its length. If the perimeter is 132 meters, what are the dimensions of the rectangle?