Show ALL your work to get full/partial credit. Each problem is worth 5 points.

For 1-2 find the restrictions and state the domain in interval form.

1/11B. \( F(x) = \sqrt{x - 4} \).

2/12B. \( H(x) = \frac{2}{x-5} \).

3/13B. Suppose that a child tosses a ball straight upward from a height of 1.5 ft, with an initial velocity of 48 ft/sec. Write the expression which gives you the vertical position of the ball, use \( s(t) = -\frac{1}{2}gt^2 + v_0t + s_0 \) where \( g = 32 \text{ ft/sec}^2 \).

If \( G(x) = 25x + 100 \), find

4/14B. The x-intercept.

5/15B. The y-intercept.

6/16B. Find the equation of the line that passes through \((2, 1)\) and perpendicular to \(y = \frac{1}{5}x - 7\).

7/17B. Write the equation of the line in # 6 in the slope-intercept form.

For #s 8 -10, use the information that the end points of a circle’s diameter are (-1, -1) and (3, 3), find

8/18B. The center (using the mid-point formula).

9/19B. Find the length of the radius.

10/20B. Write the equation of the circle in the standard form.

11/1B. Write an inequality to represent the following statement: A pilot is instructed to keep her plane at an altitude of over 25,000 feet but not to exceed 30,000 feet.

Solve the inequalities and state the answer in an interval notation.

12/2B. \( 2|z - 14| + 8 > 4 \).

13/3B. \(|x + 3| < 4 \).

14/4B. Use the quadratic formula to solve \( 9x^2 - 4x + \frac{1}{3} = 0 \).

15/5B. Solve using the zero product property \( x^2 + 5x = 24 \).

16/6B. Solve using the square root property \( (w - 5)^2 = 9 \).
17/7B. Solve \( \sqrt{x + 2} - 1 = \sqrt{x - 7} \).

18/8B. If \( A = \{-2, 0, 4, 6, 8, 10, 12\} \) and \( B = \{-1, 1, 3, 5, 7, 9\} \), find \( A \cap B \).

19/9B. If \( f(x) = 2x^2 - x \), find the average rate of change in \( f(x) \) from \( x_1 = -1 \) to \( x_2 = 2 \).

20/10B. Determine (using vertical line test) if this relation defines a function.