

Math 129 - Final Exam
May 13, 2021

Name _____
Score _____

Show all work to receive full credit. Supply explanations where necessary. Label your axes when graphing.

1. (3 points [3]) Solve for y : $-2(y + 7) + 28 > 2(6 - y)$

2. (7 points [11]) Solve for w . Write your solution set in interval notation, and graph it on a number line.

$$|10 - 4w| \leq 6$$

3. (6 points [7]) Solve for x . After finding the exact solutions, write them in decimal form, rounded to the nearest hundredth.

$$3x^2 + x - 1 = 0$$

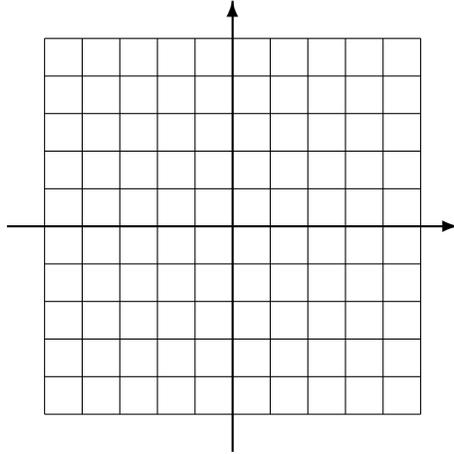
4. (6 points [3,11]) Solve for x : $\frac{x}{2} = \frac{2}{x+3}$

5. (4 points [11]) Solve for x : $\sqrt[3]{2x-5} + 4 = 2$

6. (5 points [3]) Find the x - and y -intercepts of the line described by $7y = 3x - 12$.

7. (5 points [2,4]) Find an equation of the line that passes through the points $(3, 1)$ and $(-5, 7)$. Write your final answer in slope-intercept form.

8. (5 points [2,4]) A line with slope -3 passes through the point $(1, -2)$. Graph the line and label the coordinates of two points on the line. (Also label your axes.)

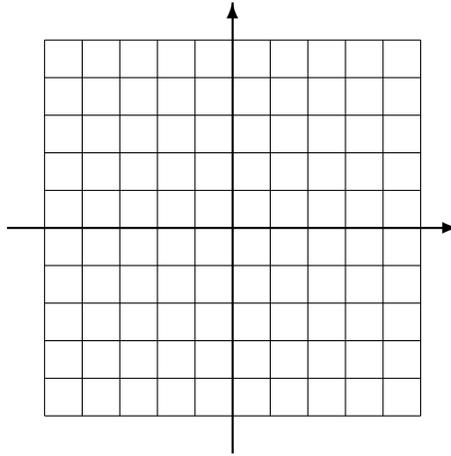


9. (6 points [2,4]) The line W passes through the point $(4, 7)$ and is perpendicular to the line given by $y - 1 = \frac{5}{2}(x + 1)$. Find an equation for the line W . Write your final answer in standard form ($Ax + By = C$).

10. (4 points [1]) Determine the domain and range of $f(x) = \sqrt{x - 1} + 3$.

11. (6 points [1,5,9]) Carefully sketch the graph of f . Label your axes.

$$f(x) = \begin{cases} -2x + 3, & x < 0 \\ -\sqrt{x}, & x > 0 \end{cases}$$



12. (4 points [13]) Determine the vertical asymptote(s) of the graph of $R(x) = \frac{2x - 2}{(x + 3)(x - 1)}$.

13. (5 points [5]) Let $f(x) = 2x^2 + 3x$ and $g(x) = \sqrt{4x}$. Compute $(g \circ f)(-3)$.

