

Algebra 2 Honors
Final Exam Review

Extra Practice (back of book)

Chapter 5 (page EP 6) 1 – 35 eoo

Chapter 7 (Page EP 8) 3 – 27 eoo, 33

Chapter 8 (Page EP 9) 1 – 39 eoo, 21

Chapter 9 (Page EP 10) 1 – 25 odd

Additional review questions

1) Find the average rate of change over the indicated interval.

$$f(x) = x^3 - x + 2 \quad \left[\frac{1}{2}, 1 \right]$$

2) Test the equation $3x^4 + 5x^2y^6 - 7y^8 = -9$ algebraically for x-axis, y-axis, origin or y=x symmetry.

3) Describe the transformation, sketch the graph, then state the domain and range in set notation. (Omit range of greatest integer function).

a) $y = \frac{6}{5-x}$

b) $y = \frac{1}{3} \left[\frac{x}{4} \right]$

c) $y = \sqrt[3]{\frac{x}{2}} - 4$

4) Rewrite as a piecewise function: $y = 3|x - 1| + 4$

5) Solve. State the solution in interval notation.

a) $\ln \sqrt{x+1} < 2$

b) $2x^2 + x \geq 15$

c) $\frac{x+8}{x+5} < 0$

6) Solve for x with Cramer's Rule

$$4x + 4y + z = 24$$

$$2x - 4y + z = 0$$

$$5x - 4y - 5z = 12$$

7) Solve the system with substitution or elimination.

$$y = x + 4z - 5$$

$$4x + 3y - 2z = 5$$

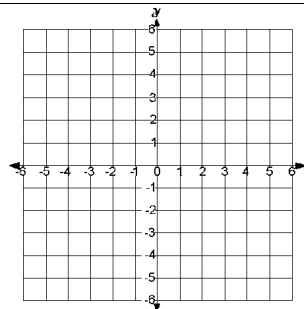
$$z = -2x + 2$$

8) Graph the system of inequalities. Name the coordinates of the vertices of the feasible region. Find the maximum and minimum values of the given the constraint: $f(x, y) = 3x + y$

$$x \leq 5$$

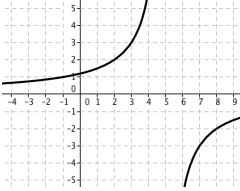
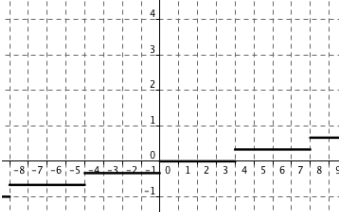
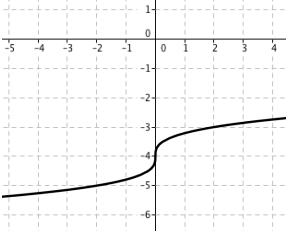
$$y \geq 2$$

$$2x - 5y \geq -10$$



Answers

1) $3/4$	2) x-axis, y-axis, origin
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<p>3a) Vertical stretch by a factor of 6, right 5, reflection over the y-axis</p>  <p>D: $\{x x \neq 5\}$ R: $\{y y \neq 0\}$</p>	<p>3b) vertical shrink by a factor of 3, horizontal stretch by a factor of 4</p>  <p>D: $\{x x \in \mathbb{R}\}$</p>	<p>3c) Horizontal stretch by a factor of 2, down 4</p>  <p>D: $\{x x \in \mathbb{R}\}$ R: $\{y y \in \mathbb{R}\}$</p>
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<p>4)</p> $y = \begin{cases} 3x + 1, & x \geq 1 \\ -3x + 7, & x < 1 \end{cases}$
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<p>5a)</p> $(-1, e^4 - 1)$	<p>5b)</p> $(-\infty, -3] \cup [5/2, \infty)$	<p>5c)</p> $(-8, -5)$
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<p>6) $x = 4$</p>	<p>7) $(0, 3, 2)$</p>	<p>8) min: 2; max: 19</p>
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