

PRACTICE TEST: Prerequisites and Properties of Functions.

Short Answer: Show all work. Do on a separate sheet of paper. NO CALCULATOR.

Use interval notation to describe the interval of real numbers.

- 1) a. $x < -2$ or $x > 5$
- b. $3 \leq x < 7$

Solve the equation by factoring.

2) $x^2 + 2x - 120 = 0$

3) $10x^2 + 37x + 18 = -12$

Solve the equation by extracting the square roots.

4) $2y^2 - 8 = 4 - 2y^2$

Solve by completing the square.

5) $x^2 + 3x - 9 = 0$

Solve the equation using the quadratic formula.

6) $2x^2 + 10x + 5 = 0$

7) Simplify: i^{984}

8) Evaluate $64^{(2/3)}$

9) Simplify by rationalizing: $\frac{4}{3\sqrt{x}-1}$

10) Simplify: $\left(\frac{4x^{-3} \sqrt[3]{y}}{5\sqrt{xy}} \right)^{-1/2}$

11) Expand:
$$\left(\frac{4}{2x^2} + \sqrt{x} - 1\right)\left(\frac{3}{\sqrt[3]{x}} + x^3\right)$$

Free Response

- 12) Given the points A(-2,5) and B(3,4) and the line L: $6x - 7y = 5$
- Find the slope of the line containing points A and B
 - Find the equation of the line containing points A and B. Put your answer in General Form
 - Find the equation of the line parallel to line L that passes through point A.
 - What is the y-intercept of the line that passes through point A that is perpendicular to line L?
- 13) Given that $x = -2 - 5i$ and $y = 6 - 2i$, evaluate the following
- $2x - 4y$
 - $-3ix$
 - $xy/2$
 - x^3
 - x/y