Algebra II
PRACTICE Examination 14

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The examination contains ten problems which are worth 10 points each. You may use a calculator on this test. However, you MAY NOT use decimal notation for any problems except Problem 10.

Problem 1. Write the slope-intercept form ($y = mx + b$) of the equation of the line which passes through the points $(4, -2)$ and $(11, 12)$.

Problem 2. Let $f(x) = \dfrac{2x - 8}{x - 3}$. Find the domain and range of f..

Problem 3. Solve the equation $8x - 3 = 5 - 3x$. Correctly write the solution set.

Problem 4. Solve the equation $x^3 - 2x^2 - 9x + 18 = 0$. Correctly write the solution set.

Problem 5. Solve the rational equation $\dfrac{x^2 - 2x - 3}{x + 3} = 5$. Correctly write the solution set.

Problem 6. Solve the radical equation $\sqrt[3]{x^2 - 2x - 8} = 3$. Correctly write the solution set.

Problem 7. Let $f(x) = (x + 3)(x - 2)^2(x - 7)$. Write a sign chart for f. Solve the inequality $f(x) \geq 0$. Write your answer in correct interval notation.

Problem 8. Solve the inequality $\dfrac{x^2 - 9}{x - 7} > 0$. Write the solution using correct interval notation.

Problem 9. Let $f(x) = x^4 - 3x^3 - 23x^2 - 37x + 8$. Find $f(7)$.

Problem 10. Chitty Chitty Bang Bang invests \$325 at an annual rate of 5.5%. How much is this worth after 12 years if it is

(a) compounded quarterly

(b) compounded continuously