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1. Solve the quadratic:  $2x^2 - 3x = -2$

2. Over what interval is the graph decreasing?  
 $-x^2 + 2x + 48 = 0$

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3. Classify by degree and number of terms:  
 $14x^3 - x^5 + 3x^2$

4. What is the remainder for  $(x^3 - 2x + 1) \div (x - 3)$ ?

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5. If a quartic polynomial has the following roots:  $7i$ , and  $-3 + \sqrt{7}$ , then what are the other roots?

6. If  $f(-2) = 0$ , then what is a factor that we know?  
An x - intercept that we know?

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7. Simplify:  $\frac{x^2 + 2x - 15}{2x^2 - 8x - 90} \div \frac{x^2 - 25}{2x^3}$

8. Solve:  $x + 2 = \sqrt{2x + 12}$

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9. Determine the horizontal and vertical asymptotes for:  $f(x) = \frac{-4x + 9}{x^2 - 4}$

10. State the domain and range of:  
 $f(x) = -\frac{2}{3}\sqrt{x - 5} - 7$

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