Precalculus 11 – Flashback #3

1. Determine the equation of the quadratic function that has a vertex of (4, -2) and goes through the point (-3,8).

2. Determine the discriminant and state the nature of the roots for:
   $3x^2 - 11x = 5$

3. Evaluate (without a calculator) $\quad -\left(\frac{1}{125}\right)^{-2/3}$

4. Explain the difference between a quadratic and a linear function.

5. Rationalize and reduce (or reduce then rationalize): $\dfrac{2\sqrt{320}}{\sqrt{3}}$. Is there a difference if you rationalize or reduce first?

6. Simplify: $\dfrac{-12+\sqrt{80}}{4}$

7. State the transformations for the function $\quad y = -7(x-11)^2 - 19$

8. Two numbers have a difference of 5. Their product is a minimum. Determine the two numbers and their product.

9. Solve algebraically: $2x^2 - 3x \le 9$

10. Simplify: $\dfrac{x^2+5x+6}{9-x^2} \div \dfrac{x+3}{x+5}$

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