BECA/Huson/Precalculus: Regents Prep Name:
20 May 2025

Practice Regents problems #1

1. Algebraically solve for x: $3x = 12 + \sqrt{x+3}$

2. Solve the equation $\sqrt{x^2+5x} - 5 = x$ algebraically.

3. Given $x > 0$, rewrite the expression $\dfrac{x^{\frac{1}{2}}}{x^{\frac{1}{5}}}$ in radical form.

4. Given $a > 0$, solve the equation $a^{x+2} = \sqrt[2]{a^3}$ for x algebraically.

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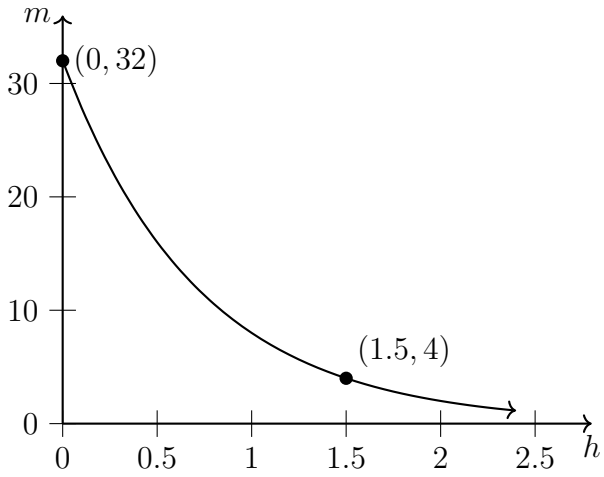
AII-F.LE.2: Construct a linear or exponential function symbolically given: a graph, a description of the relationship, or two input-output pairs (include reading these from a table).

5. The graph shows the amount of a medicine m, in milligrams, remaining in a patient's body h hours after receiving an injection. The amount of the medicine decreases exponentially.



(a) By what factor did the medicine decrease in the first hour and a half? Explain how you know.

(b) By what factor did the medicine decrease in the first half hour? What about in the first hour? Explain how you know.

(c) Write an equation relating m, the number of milligrams of the drug in the patient's body, and h, the number of hours since the injection.