76 For next week's chemistry experiment, Ms. Purdy needs 3 test tubes for every 2 students. Write an equation for the situation and explain how Ms. Purdy could use it to determine how many test tubes she will need for the 116 students in her 5 chemistry classes. [4]

77 Lance used the equation $y = 2.5x + 30$ to graph the cost to print posters for an upcoming 1950s car parade. The variable x represents the number of posters in this equation. What does the equation mean in terms of slope and y-intercept? [4]

78 Describe in words how the graph of $f(x) = -12x + 5$ is similar to and different from the graph of $g(x) = -10x + 5$. [3]

79 In an annual inventory of amphibians inhabiting a nature preserve, a biologist spotted 42 frogs and 12 toads in one area of the preserve. If the proportion of frogs to toads is typical of the whole preserve, how many frogs should she expect to see in an adjacent area if she counted 2 toads? [2]

80 The area of a rectangle is $24x^8y^4$ square units. The width is $6x^3y^2$. What is the length of the rectangle? [2]

76 For next week's chemistry experiment, Ms. Purdy needs 3 test tubes for every 2 students. Write an equation for the situation and explain how Ms. Purdy could use it to determine how many test tubes she will need for the 116 students in her 5 chemistry classes. [4] **I.A.3.**

Sample answer: She could use the equation $t = \frac{3}{2}s$, where t is the number of test tubes and s is the number of students, and substitute 116 for s to determine the total number of test tubes she needs for the experiment.

77 Lance used the equation $y = 2.5x + 30$ to graph the cost to print posters for an upcoming 1950s car parade. The variable x represents the number of posters in this equation. What does the equation mean in terms of slope and y-intercept? [4] **II.B.2.**

Sample answer: The slope of the graph is 2.5, which means that it costs \$2.50 to print each poster, or that the rate of increase is \$2.50. The y-intercept of the graph is 30, which means that costs start at \$30 to print the posters.

78 Describe in words how the graph of $f(x) = -12x + 5$ is similar to and different from the graph of $g(x) = -10x + 5$. [3] **II.B.3.**

Sample answer: They are similar in that both graphs intercept the y-axis at 5. They are different in that the slope of f is -12 and the slope of g is -10.

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She should expect to see 7 frogs.

80 The area of a rectangle is $24x^8y^4$ square units. The width is $6x^3y^2$. What is the length of the rectangle? [2] **III.B.1.**

$4x^5y^2$