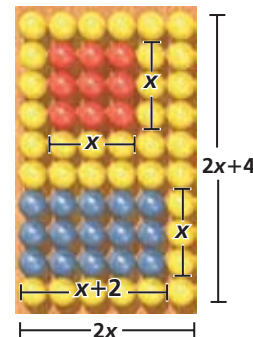


35. **Entertainment** A carnival game board is covered completely in small balloons. You throw darts at the board and try to pop the balloons.
- Write and simplify an expression describing the probability that the next two balloons popped are red and then blue. (*Hint:* Write the probabilities as ratios of the areas of rectangles.)
 - What is the probability that the next two balloons popped are red and then blue if $x = 3$?
36. **ERROR ANALYSIS** Which is incorrect? Explain the error.



A

$$\frac{4a^2 - b^2}{a^2} \cdot \frac{a}{2a - b}$$

$$\frac{2\cancel{4}a^2 - b^2}{a^2} \cdot \frac{\cancel{a}}{2\cancel{a} - b} = \frac{2 - b^2}{b}$$

B

$$\frac{4a^2 - b^2}{a^2} \cdot \frac{a}{2a - b}$$

$$\frac{(2a - b)(2a + b)}{a^2} \cdot \frac{\cancel{a}}{2\cancel{a} - b} = \frac{2a + b}{a}$$

37. **Critical Thinking** Which of the following expressions is NOT equivalent to the other three? Explain why.
- $\frac{4x^2}{x^2 - 3x} \cdot \frac{2x - 6}{8y^2}$
 - $\frac{6xy^2}{x^2} \div \frac{3y^4}{2x^2}$
 - $\frac{10x^4y}{5xy^2} \div 2x^2y$
 - $\frac{4x}{xy^2 + 2y^2} \cdot \frac{x^2 - 4}{4x - 8}$

Multiply or divide. Simplify your answer.

- $\frac{5p^3}{p^2q} \cdot \frac{2q^3}{p^2}$
 - $\frac{2x^2}{4x - 8} \cdot \frac{x^2 - 5x + 6}{x^5}$
 - $\frac{33m - 3m^2}{-2m - 4} \div \frac{6m - 66}{m^2 - 4m}$
 - $\frac{6m^2 - 18m}{12m^3 + 12m^2} \div \frac{m^2 - 9}{m^2 + 4m + 3}$
 - $\frac{x^2 - 9}{4x} \div (4x^2 - 36)$
 - $\frac{12w^4x^7}{3w^3} \cdot \frac{w^{-1}x^{-7}}{4}$
44. **Write About It** Explain how to divide $\frac{1}{m} \div \frac{3}{4m}$.

MULTI-STEP TEST PREP



45. This problem will prepare you for the Multi-Step Test Prep on page 926.

The size of an image projected on a screen depends on how far the object is from the lens, the magnification of the lens, and the distance between the image and the lens. Magnification of a lens is $M = \frac{I}{O} = \frac{y}{x}$ where I is the height of the image, O is the height of the object, x is the distance of the object from the lens, and y is the distance of the image from the lens.

- If an object 16 cm high is placed 15 cm from the lens, it forms an image 60 cm from the lens. What is the height of the image?
- Marie moves the same object to a distance of 20 cm from the lens. If the image is the same size as part a, what is the distance between the image and the lens?
- What is the magnification of the lens?