ERROR ANALYSIS *Describe* and correct the error in simplifying the expression.
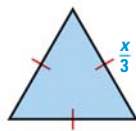
37.
$$\frac{x^{10}}{x^2} = x^5 \quad ✗$$

38.
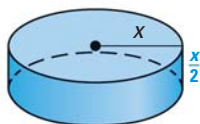$$x^5 \cdot x^3 = x^{15} \quad ✗$$

39.
$$(-3)^2(-3)^4 = 9^6 \quad ✗$$

⬡ **GEOMETRY** Write an expression for the figure's area or volume in terms of *x*.
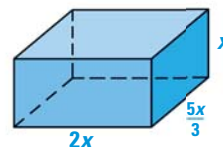
40. $A = \dfrac{\sqrt{3}}{4}s^2$

41. $V = \pi r^2 h$

42. $V = \ell wh$

REASONING Write an expression that makes the statement true.

43. $x^{15}y^{12}z^8 = x^4y^7z^{11} \cdot \underline{?}$

44. $3x^3y^2 = \dfrac{12x^2y^5}{?}$

45. $(a^5b^4)^2 = a^{14}b^{-1} \cdot \underline{?}$

46. 🚩 **TAKS REASONING**   Find three different ways to complete the following statement so that it is true: $x^{12}y^{16} = (x^?y^?)(x^?y^?)$.

CHALLENGE Refer to the properties of exponents on page 330.

47. Show how the negative exponent property can be derived from the quotient of powers property and the zero exponent property.

48. Show how the quotient of powers property can be derived from the product of powers property and the negative exponent property.

PROBLEM SOLVING

49. OCEAN VOLUME The table shows the surface areas and average depths of four oceans. Calculate the volume of each ocean by multiplying the surface area of each ocean by its average depth. Write your answers in scientific notation.

Ocean	Surface area (square meters)	Average depth (meters)
Pacific	1.56×10^{14}	4.03×10^3
Atlantic	7.68×10^{13}	3.93×10^3
Indian	6.86×10^{13}	3.96×10^3
Arctic	1.41×10^{13}	1.21×10^3

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50. EARTH SCIENCE The continents of Earth move at a very slow rate. The South American continent has been moving about 0.000022 mile per year for the past 125,000,000 years. How far has the continent moved in that time? Write your answer in scientific notation.

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○ **= WORKED-OUT SOLUTIONS**
  on p. WS1

🚩 **= TAKS PRACTICE**
  AND REASONING