EXAMPLE 4
on p. 416
for Exs. 48–58

ERROR ANALYSIS *Describe* **and correct the error in solving the equation.**

48.

$x^3 = 27$

$x = \sqrt[3]{27}$

$x = 9$

49.

$x^4 = 81$

$x = \sqrt[4]{81}$

$x = 3$

SOLVING EQUATIONS **Solve the equation. Round the result to two decimal places when appropriate.**

50. $x^3 = 125$

51. $5x^3 = 1080$

52. $x^6 + 36 = 100$

53. $(x - 5)^4 = 256$

54. $x^5 = -48$

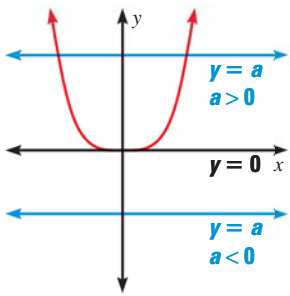
55. $7x^4 = 56$

56. $x^3 + 40 = 25$

57. $(x + 10)^5 = 70$

58. $x^6 - 34 = 181$

59. **CHALLENGE** The general shape of the graph of $y = x^n$, where n is a positive *even* integer, is shown in red.



a. *Explain* how the graph justifies the results in the Key Concept box on page 414 when n is a positive *even* integer.

b. Draw a similar graph that justifies the results in the Key Concept box when n is a positive *odd* integer.

PROBLEM SOLVING

EXAMPLE 5
on p. 416
for Exs. 60–65

60. **SHOT PUT** The shot used in men's shot put has a volume of about 905 cubic centimeters. Find the radius of the shot. (*Hint:* Use the formula $V = \frac{4}{3}\pi r^3$ for the volume of a sphere.)

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61. **BOWLING** A bowling ball has a surface area of about 232 square inches. Find the radius of the bowling ball. (*Hint:* Use the formula $S = 4\pi r^2$ for the surface area of a sphere.)

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62. **INFLATION** If the average price of an item increases from p_1 to p_2 over a period of n years, the annual rate of inflation r (expressed as a decimal) is given by $r = \left(\frac{p_2}{p_1}\right)^{1/n} - 1$. Find the rate of inflation for each item in the table. Write each answer as a percent rounded to the nearest tenth.

Item	Price in 1950	Price in 1990
Butter (lb)	$.7420	$2.195
Chicken (lb)	$.4430	$1.087
Eggs (dozen)	$.6710	$1.356
Sugar (lb)	$.0936	$.4560

63. **MULTI-STEP PROBLEM** The power p (in horsepower) used by a fan with rotational speed s (in revolutions per minute) can be modeled by the formula $p = ks^3$ for some constant k. A certain fan uses 1.2 horsepower when its speed is 1700 revolutions per minute. First find the value of k for this fan. Then find the speed of the fan if it uses 1.5 horsepower.

= WORKED-OUT SOLUTIONS on p. WS1 = TAKS PRACTICE AND REASONING