GEOMETRY Find the value of *x*.
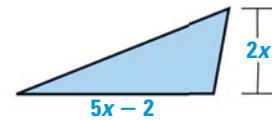
50. Area of square = 36

2x

51. Area of rectangle = 30

x

3x + 1
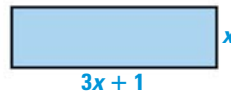
52. Area of triangle = 115

2x

5x − 2

SOLVING EQUATIONS Solve the equation.

53. $2x^2 - 4x - 8 = -x^2 + x$

54. $24x^2 + 8x + 2 = 5 - 6x$

55. $18x^2 - 22x = 28$

56. $13x^2 + 21x = -5x^2 + 22$

57. $x = 4x^2 - 15x$

58. $(x + 8)^2 = 16 - x^2 + 9x$

CHALLENGE Factor the expression.

59. $2x^3 - 5x^2 + 3x$

**60.** $8x^4 - 8x^3 - 6x^2$

61. $9x^3 - 4x$

PROBLEM SOLVING

62. ARTS AND CRAFTS You have a rectangular stained glass window that measures 2 feet by 1 foot. You have 4 square feet of glass with which to make a border of uniform width around the window. What should the width of the border be?

TEXAS @HomeTutor for problem solving help at classzone.com

63. URBAN PLANNING You have just planted a rectangular flower bed of red roses in a city park. You want to plant a border of yellow roses around the flower bed as shown. Because you bought the same number of red and yellow roses, the areas of the border and flower bed will be equal. What should the width of the border of yellow roses be?
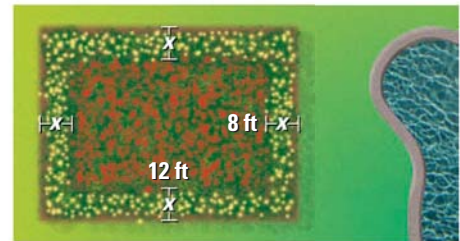
TEXAS @HomeTutor for problem solving help at classzone.com

x

8 ft

12 ft

x

64. ⬥ **TAKS REASONING** A surfboard shop sells 45 surfboards per month when it charges $500 per surfboard. For each $20 decrease in price, the store sells 5 more surfboards per month. How much should the shop charge per surfboard in order to maximize monthly revenue?

A $340

B $492

C $508

D $660

65. ⬥ **TAKS REASONING** A restaurant sells about 330 sandwiches each day at a price of $6 each. For each $.25 decrease in price, 15 more sandwiches are sold per day. How much should the restaurant charge to maximize daily revenue? *Explain* each step of your solution. What is the maximum daily revenue?

66. PAINTINGS You are placing a mat around a 25 inch by 21 inch painting as shown. You want the mat to be twice as wide to the left and right of the painting as it is at the top and bottom of the painting. You have 714 square inches of mat that you can use. How wide should the mat be to the left and right of the painting? at the top and bottom of the painting?

x

21 in.

x

2x — 25 in. — 2x

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

⬥ = **TAKS PRACTICE AND REASONING**