

GROUPING SYMBOLS Add parentheses to make a true statement.

52. $9 + 12 \div 3 - 1 = 15$

53. $4 + 3 \cdot 5 - 2 = 21$

54. $8 + 5^2 - 6 \div 3 = 9$

55. $3 \cdot 4^2 - 2^3 + 3^2 = 23$

56. **CHALLENGE** Under what conditions are the expressions $(x + y)^2$ and $x^2 + y^2$ equal? Are the expressions equivalent? *Explain.*

PROBLEM SOLVING

EXAMPLE 3

on p. 11
for Exs. 57–59

57. **MOVIE COSTS** In the United States, the average movie ticket price (in dollars) since 1974 can be modeled by $0.131x + 1.89$ where x is the number of years since 1974. What values of x should you use to find the ticket prices in 1974, 1984, 1994, and 2004? Find the ticket prices for those years.

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58. **MILEAGE** You start driving a used car when the odometer reads 96,882. After a typical month of driving, the reading is 97,057. Write an expression for the reading on the odometer after m months, assuming the amount you drive each month is the same. Predict the reading after 12 months.

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59. **★ SHORT RESPONSE** A student has a debit card with a prepaid amount of \$270 to use for school lunches. The cafeteria charges \$4.50 per lunch. Write an expression for the balance on the card after buying x lunches. Does your expression make sense for all positive integer values of x ? *Explain.*

EXAMPLE 5

on p. 13
for Exs. 60–62

60. **CROSS-TRAINING** You exercise for 60 minutes, spending w minutes walking and the rest of the time running. Use the information in the diagram below to write and simplify an expression for the number of calories burned. Find the calories burned if you spend 20 minutes walking.



61. **◆ MULTIPLE REPRESENTATIONS** A theater has 30 rows of seats with 20 seats in each row. Tickets for the seats in the n rows closest to the stage cost \$45 and tickets for the other rows cost \$35.

- Visual Thinking** Make a sketch of the theater seating.
- Modeling** Write a verbal model for the income if all seats are sold.
- Simplifying** Write and simplify an expression for the income.
- Making a Table** Make a table for the income when $n = 5, 10,$ and $15.$

62. **COMPUTERS** A company offers each of its 80 workers either a desktop computer that costs \$900 or a laptop that costs \$1550. Write and simplify an expression for the cost of all the computers when n workers choose desktop computers. Find the cost if 65 workers choose desktop computers.