

1.2 Exercises

Vocabulary and Core Concept Check

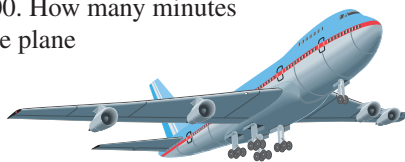
- COMPLETE THE SENTENCE** To solve the equation $2x + 3x = 20$, first combine $2x$ and $3x$ because they are _____.
- WRITING** Describe two ways to solve the equation $2(4x - 11) = 10$.

Monitoring Progress and Modeling with Mathematics

In Exercises 3–14, solve the equation. Check your solution. (See Examples 1 and 2.)

- $3w + 7 = 19$
- $2g - 13 = 3$
- $11 = 12 - q$
- $10 = 7 - m$
- $5 = \frac{z}{-4} - 3$
- $\frac{a}{3} + 4 = 6$
- $\frac{h + 6}{5} = 2$
- $\frac{d - 8}{-2} = 12$
- $8y + 3y = 44$
- $36 = 13n - 4n$
- $12v + 10v + 14 = 80$
- $6c - 8 - 2c = -16$

15. **MODELING WITH MATHEMATICS** The altitude a (in feet) of a plane t minutes after liftoff is given by $a = 3400t + 600$. How many minutes after liftoff is the plane at an altitude of 21,000 feet?



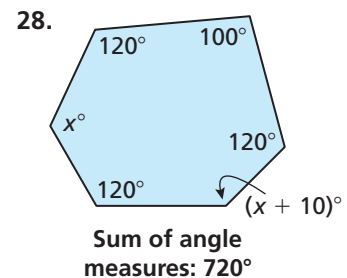
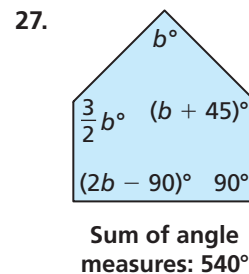
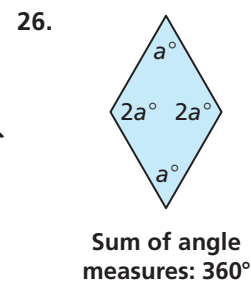
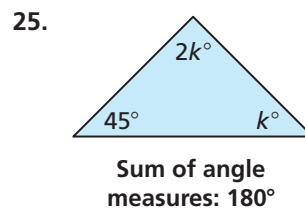
16. **MODELING WITH MATHEMATICS** A repair bill for your car is \$553. The parts cost \$265. The labor cost is \$48 per hour. Write and solve an equation to find the number of hours of labor spent repairing the car.

In Exercises 17–24, solve the equation. Check your solution. (See Example 3.)

- $4(z + 5) = 32$
- $-2(4g - 3) = 30$
- $6 + 5(m + 1) = 26$
- $5h + 2(11 - h) = -5$
- $27 = 3c - 3(6 - 2c)$
- $-3 = 12y - 5(2y - 7)$

- $-3(3 + x) + 4(x - 6) = -4$
- $5(r + 9) - 2(1 - r) = 1$

USING TOOLS In Exercises 25–28, find the value of the variable. Then find the angle measures of the polygon. Use a protractor to check the reasonableness of your answer.



In Exercises 29–34, write and solve an equation to find the number.

- The sum of twice a number and 13 is 75.
- The difference of three times a number and 4 is -19 .
- Eight plus the quotient of a number and 3 is -2 .
- The sum of twice a number and half the number is 10.
- Six times the sum of a number and 15 is -42 .
- Four times the difference of a number and 7 is 12.