4.1 Independent Practice

Solve each equation.

15. \(6y - (2y - 5) = 29\)

16. \(5x - 9 = 7x + 6 - 2x\)

17. \(8(3m + 5) = 2m - 4\)

18. \(15q - 3(4q - 6) = 3q + 9 - 9q\)

19. \(6z + 10 = 4z + 19\)

20. \(8b + 12 - b = 8 + 7b + 4\)

21. \(5a - (8 - a) = 4a - 10\)

22. \(7n - 2 = 6n - 2n\)

23. \(8d - \frac{1}{3}(6 - 9d) = 42\)

Write and solve an equation to solve each problem.

24. Mari and Jen each work 20 hours a week at different jobs. Mari earns twice as much as Jen. Together they earn $480. How much does each girl earn in a week?

25. David's bowling score is 5 less than 3 times Aaron's score. The sum of their scores is 215. Find the score of each student.

26. **Multi-Step** One month, Jon worked 3 hours less than Chaya, and Angelica worked 4 hours more than Chaya. Together they worked 196 hours. Find the number of hours each person worked.

27. The teacher separated her class of twenty-eight students into two groups. One group has 4 more than twice as many students as the other group. How many students are in each group?

28. An equilateral triangle and a square have the same perimeter. Each side of the square measures 6 cm. What is the length of each side of the triangle?

29. Gaetano spent $37.80, including tax, on a pair of jeans. How much did the jeans cost if there was an 8% sales tax?

30. The temperature at 4 a.m. was \(-13\)°F. The temperature was rising at a steady rate of 5°F an hour. At what time will the temperature be 12°F?

31. Brian is fencing a rectangular area in the backyard for his dog. He has 25 ft of fence. He does not need fencing on the side that runs along the garage. This side is 9 ft long. What are the dimensions of the kennel?
4.2 Independent Practice

Solve and graph each inequality.

12. \(-20x \geq -400\)

\[\begin{array}{cccc}
-30 & -10 & 10 & 30 \\
\end{array}\]

13. \(0 < -10k + 5k\)

\[\begin{array}{cccc}
-4 & -2 & 0 & 2 \\
\end{array}\]

14. \(6 - 5d > 21\)

\[\begin{array}{cccc}
-6 & -4 & -2 & 0 \\
\end{array}\]

15. \(3(10 + 2m) \leq 96\)

\[\begin{array}{cccc}
6 & 8 & 10 & 12 \\
\end{array}\]

16. \(5a - 6 \geq 3a\)

\[\begin{array}{cccc}
0 & 2 & 4 & 6 \\
\end{array}\]

17. \(5q \geq 8q - \frac{3}{2}\)

\[\begin{array}{cccc}
-4 & -2 & 0 & 2 \\
\end{array}\]

18. \(2b - 15 > 5b\)

\[\begin{array}{cccc}
-8 & -6 & -4 & -2 \\
\end{array}\]

19. \(7 - 6x < 2x + 89\)

\[\begin{array}{cccc}
-12 & -10 & -8 & -6 \\
\end{array}\]

For Exercises 20–22, determine whether each inequality is sometimes, always, or never true.

20. \(w + 6 \leq w - 6\)

21. \(12s \geq 10s\)

22. \(3k - 4 < 2k + 1\)

23. After selling a dozen copies of the daily newspaper, a newsstand had fewer than 75 copies left. How many copies did the newsstand have at the beginning of the day?

24. Ken wants to rent a car for a week and to pay no more than $130. How far can he drive if the car rental costs $94 a week plus $0.40 a mile?

25. Lana's car averages 25 miles per gallon. What is the greatest number of gallons of gasoline that she will need if she travels no more than 450 miles?

26. The length of a rectangle is 4 cm longer than the width, and the perimeter is at least 48 cm. What are the smallest possible dimensions of the rectangle?

27. David charges $15 plus $5.50 per hour to mow lawns. Ari charges $12 plus $6.25 per hour to mow lawns. In what situations is Ari's charge greater than or equal to David's charge?