

4.2 Practice Set

1. What is the difference in the meaning of an equation and an inequality?
2. What is the difference between the processes of solving a linear equation and solving a linear inequality?

Graph each of the following inequalities on a number line and write it in interval notation.

3. $x < -3$
4. $y \geq 2.5$
5. $z > -3.7$
6. $r \leq 0$
7. $-5 > x$
8. $3 \leq x$
9. $m \geq -\frac{3}{4}$
10. $3 < x \leq 7$
11. $1 > y \geq -4$

Solve each of the following inequalities for the indicated variable, graph your solution on a number line and write your solution in interval notation.

12. $x + 2 \leq 7$
13. $6y > 3y + 8$
14. $10r - 5 \leq 12r + 3$

15. $\frac{3}{5}x \geq 1$
16. $-2x + 15 < 17$
17. $\frac{4}{5} + \frac{x}{3} < \frac{2}{15}$
18. $0.6(3x - 1) \leq 4.2(x + 2)$
19. $\frac{6}{5}x - \frac{1}{4} \leq \frac{9}{10}x - \frac{2}{5}$

Set up an inequality for each of the following problems. Solve your inequality and round your answer to the nearest whole number.

20. Suppose you have taken 3 of four exams in your math course with the following scores: 92, 88 and 75. What score do you need on the fourth exam to maintain a B average?
21. A small vehicle has a weight capacity of 450 pounds and has 5 seats. The driver weighs 128 pounds. How many children can fit in the vehicle with the driver if the average weight of a child is 82 pounds?

Distributed Practice Problems

Solve each of the following equations for the indicated variable.

22. $|3x + 2| + 3 = 10$
23. $4y^3 - 16y - 2y^2 + 8 = 0$
24. $(z - 1)^{\frac{2}{3}} + 8(z - 1)^{\frac{1}{3}} + 7 = 0$
25. $4x^2 - 7x + 2 = 0$