

Chapter 2 review

1. True or false? If a number is an integer, it is a rational number.

Let U be the set of whole numbers from 1 to 9. Let $A = \{1, 3, 6, 8, 9\}$ and $B = \{2, 6, 9\}$

2. $A \cup B \cap \overline{B}$

Let U be the set of whole numbers 1-10. $A = \{2, 4, 6, 8\}$ and $B = \{1, 3, 6, 7\}$

3. $A \cap \sim B$

4. Consider the compound inequality $a < 2x + 9$ or $a > -x + 1$. For which value of a does the solution consist of all numbers greater than 3?

a. 3 b. 7 c. 11 d. 15 e. 19

5. Joel sells ice cream cones at the county fair. He has to rent the equipment for \$36 and spend \$0.52 on ingredients for each cone. What is the minimum number of ice cream cones Joel must sell at \$1.40 each in order to **make a profit**?
6. Your veterinarian tells you that a healthy weight for your dog is between 70 and 80 pounds. Write an inequality to represent your dog's healthy weight w in *kilograms*. (Hint: 1 kilogram = 2.2 lbs)
7. Tina can type at least 40 words per minute. Write and graph an inequality to describe this statement.
8. The cost of a 5-lb bag of dog food ranges from \$4.65 to \$5.35. Write and graph an inequality to describe this statement.
9. Joe and his brother are collecting money for a charity. Joe has already collected \$170 and plans to earn at least \$20 per week. His brother has \$80, but plans to earn at least \$50 per week. How many weeks until Joe's brother has more money than Joe? How much money will they each have?

Solve and graph.

10. $-4 \leq 2x + 10 \leq 4$

11. $x + 5 < 7$

12. $-12y < -60$

13. $12a > 78$

14. $-5x - 20 < 10$

15. $1 - \frac{1}{3}x > 3$

16. $8b - 9 \leq 9b + 2$

17. $-3 > 2x - 1 > -5$

18. $-2 < -2x < 2$

19. $2x \geq 8$ or $-2x + 1 > -13$

20. $\left| \frac{3}{8}x - 10 \right| < 0$

21. $5 > |-4 + 5x|$

22. $|x - 2| - 2 < 7$

23. $15 - |x| > 7$

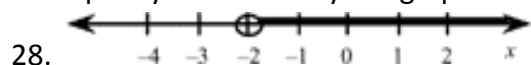
24. $|3x + 2| \leq 1$

25. $|x + 7| \geq 9$

26. $|2 - x| \leq 2$

27. Graph the solution of $|x| > 2$

Write an inequality illustrated by the graph below.



29. Solve the inequality $4x + 2 \leq 2(x - 1)$

- a. Graph the solution on a number line
- b. Explain how to check your answer.
- c. Name three values that would be appropriate to use when checking your solution.
- d. Compare the procedure for checking the answer to an inequality with the procedure for checking the answer to an equation.