

Standard 5: Students will use algebraic concepts, functions, patterns, and relationships to solve problems.

Directions: Complete each of the following problems.

1. The table shows part of a bus schedule for a stop near your home. Based on the pattern, when does the 9th bus make a stop? (Standard 7.5.1)

Bus Number	1	2	3	4	5	6
Time of Bus Stop	5:45	6:10	6:35	7:00	7:25	7:50

2. Find the next number in the list below. Explain your reasoning. (Standard 7.5.1)
1, 2, 4, 7, 11, 16, 22, _____
3. Write an equation for the algebraic sentence given below. (Standard 7.5.2)
Twice a number n increased by 6 is 12.
4. Write an expression for the phrase: The difference of twice a number w and 3. (Standard 7.5.2)
5. Write an expression for the phrase: One-third of the square of a number y . (Standard 7.5.2)
6. Write an expression for the phrase: The quotient of a number k and 3. (Standard 7.5.2)
7. Simplify the expression $54 \div 6 + 18 \times 2$. (Standard 7.5.3)
8. Use properties to simplify the expression $(22 \times 8) + (22 \times 2)$. (Standard 7.5.3)
9. Name the property illustrated by $7.4 \times 138.6 = 138.6 \times 7.4$. (Standard 7.5.3)
10. Use properties to simplify the expression $11.5 + 2.6 + 0.5 + 0.4$. (Standard 7.5.3)
11. Solve the equation $\frac{x}{4} = 8$. (Standard 7.5.4)
12. Solve the equation $x - 4 = -5$. (Standard 7.5.4)

13. Solve the equation $5x = 4$. (Standard 7.5.4)
14. Solve the equation $x + 9 = 6$. (Standard 7.5.4)
15. Solve the inequality $x - 4 > 3$. (Standard 7.5.4)
16. Solve the inequality $-2x \leq 16$. (Standard 7.5.4)
17. Solve the inequality $3x + 8 < 23$. (Standard 7.5.4)
18. Solve the equation $\frac{x}{4} + 1 = 2$. (Standard 7.5.4)
19. Write an equation for the word sentence: Twelve equals a number divided by 4. (Standard 7.5.5)
20. Write an equation for the problem: After \$525 was spent on the class trip, there was \$325 left in the class treasury. How much was in the treasury before the trip? (Standard 7.5.5)
21. Write an equation for the problem: A department store's total receipts from a sale on pillow cases were \$251.64. If 36 pillowcases were sold, what was the price of each? (Standard 7.5.5)
22. Write an inequality for the word sentence: Six is greater than a number t . (Standard 7.5.5)
23. Write an inequality for the word sentence: A used-car dealer has sold 30 compact cars and now has fewer than 70 left. (Standard 7.5.5)