



1. The total cost (c) in dollars of renting a sailboat for a certain number of days (n) is given by the equation  $c = 120 + 60n$ . If the total cost was \$360, for how many days was the sailboat rented?

- A. 2 B. 4 C. 6 D. 10 E. 12

2. Which equation, I, II or III, has the solution  $w = -2$ ?

- A. I only
B. II only
C. I and II
D. I and III
E. I, II and III

- I. 6w = -12
II. w + 5 = -10
III. w + 4 = 2

3. Which equation correctly models the following description? Doubling a child's age and adding nine years is the same as ten years less than triple the child's age.

- A. 2A + 9 = 10 - 3A B. 3A + 9 = 2A - 10 C. 2A + 9 = 3A - 10
D. 2A + 3A = 9 - 10 E. 3A + 9 = 2A + 10



4. What are the two steps needed to solve this equation for k?

5k + 9 = 44

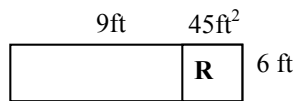
- A. Add 9 and multiply by 5
B. Add 9 and divide by 5
C. Subtract 9 and multiply by 5
D. Subtract 9 and divide by 5

5. Which equation below has the same solution as the equation 2x + 3 = 11?

- A. x + 1 = 5
B. x - 1 = 5
C. x - 1 = -5
D. x + 1 = -5
E. -5 + 1 = x

6. What is the perimeter and area of the rectangle labeled R? (hint: label sides first...)

- A. P=11ft A=30ft^2
B. P=22ft A=30ft^2
C. P=11ft A=15ft^2
D. P=22ft A=15ft^2



7. Use the table below to select the matching rule.

Table with 2 rows (x, y) and 7 columns of values.

- A. y = 3x - 1 B. y = 1/3x + 1
C. y = x - 1 D. y = 3x + 1



8. Use the correct order of operations to simplify the expression:  $14(2 + 3 - 2 \cdot 2) \div (4^2 - 3^2)$

- A. 2
- B. 3
- C. 4
- D. 5
- E. 6

9. If the bill for dinner is \$140 before Mr. Wallis calculates the tip, which of the following statements is true?"

- A. A 10% tip would be \$21
- B. A 15% tip would be \$28
- C. A 10% tip would be \$14
- D. A 15% tip would be \$7

10. The pattern below is made using toothpicks. Instead of counting the number of tiles, you will count the number of toothpicks used. With this in mind, complete each cell of the table.

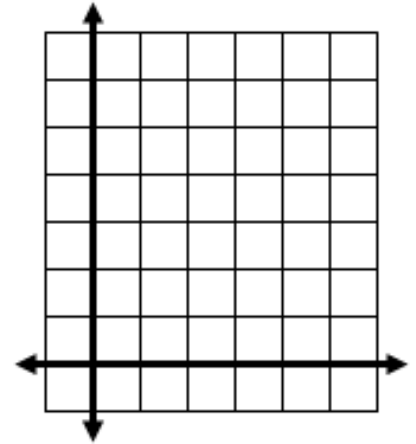
<b>x</b>	Figure 0	Figure 1	Figure 2	Figure 3	Figure 4
<b>y</b>		6 toothpicks		10 toothpicks	

11. Describe the pattern in 1 sentence.

12. Write an equation (rule) for the pattern using x and y.

13. Draw a graph of the rule. Label your axes and include a scale.

14. Explain what the point (5,14) means for this pattern in one sentence.



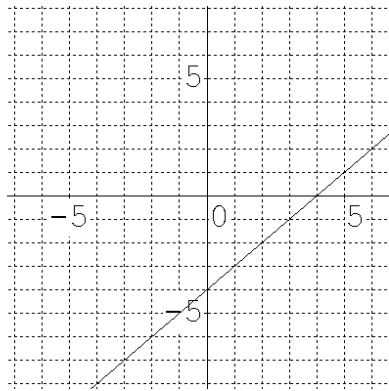
15. How many toothpicks are in the 60<sup>th</sup> figure? Show or explain how you know.

16. Which figure has 108 toothpicks? Show or explain your work.



17. According to the graph to the right, which statement is false?

- A. The x-intercept is the point where the line crosses the x-axis
- B. The y-intercept of the line is (-4,0)
- C. If  $x = 3$ , then  $y = -1$
- D. A and B are false
- E. A, B and C are false



18. Brian is in Algebra 2. He solved the equation  $2x^2 - 5x - 13 = 20$  and got the answer  $x = -3$ , but he's not feeling very confident. Decide whether or not he is correct by checking his answer. After checking, write a sentence explaining how you made your decision.

**TABLE TROUBLE** - Sitara ran out of the room as the bell rang and forgot to finish her table for the rule that relates money earned (dollars), represented by M, and time spent babysitting (hours) each week, represented by T. The rule is  $M = 6T + 10$



<b>T (hours)</b>	5	-2	3		11
<b>M (dollars)</b>	40		38	130	76

19. Fill in the missing values in the table.

Two of the values on the table do not make sense! Write the coordinates of the 2 pairs that seem "suspicious" or "illogical" and explain why in 1-2 complete sentences.

20. Coordinates ( , )

Explanation →

21. Coordinates ( , )

Explanation →

Solve the equations below, clearly check your answer if possible.

22.  $4x - 8 = 2x + 6$

23.  $-(m - 2) - (7 - m) = 6$

24.  $17 - 6x + 4 = -3x + 21 - 3x$



# Chapter 3 Analysis | Algebra 1

Name \_\_\_\_\_

Date \_\_\_\_\_ Per \_\_\_\_

25. Lydia graphed the parabola  $y = -x^2 + 4$ . Damien thinks he could add another point at  $(3, -5)$  to extend the pattern. Is he correct? Explain using 1-2 sentences.

