Supplemental Worksheet: EAGLE Problem Set 2 Algebra Strand

1. An empty box weighs 6 ounces. Jenna puts 12 calculators in the box. The total weight of the box and calculators is 96 ounces. Which equation models the weight, w, in ounces of each calculator?
   a. $6w + 12 = 96$ b. $6 + 12w = 96$ c. $6 + 96 = 12w$ d. $12 + 96 = 6w$
2. A blank trophy costs $20. Each letter engraved on the trophy costs $3. Which expression models the cost of a trophy with n letters engraved?
   a. $20 + 3n$ b. $20n + 3$ c. $(20 + 3)n$ d. $20 + 3 + n$
3. Karen went to an amusement park that charged $8 for admission and $2 per ride. She went on n rides. Which expression shows how much, in dollars, Karen spent in all?
   a. $2 + 8n$ b. $2n + 8$ c. $2 (n + 8)$ d. $8(n + 2)$
4. Daisy ran m miles training for a race. One mile is approximately 1.6 kilometers. Which expression shows the approximate number of kilometers Daisy ran?
   a. $m + 1.6$ b. $m \div 1.6$ c. $1.6m$ d. $1.6 \div m$
5. Viveca and her friend are buying some crawfish. The equation, $1.5x + x = 10$, can be used to find the cost per pound, x, of the crawfish. What is the value of x?
   a. 4 b. 6 c. 7.5 d. 8.5
6. Cashews cost $3 per pound, and banana chips cost $6 per pound. Jerry bought x pounds of each item and spent $36 in all. The equation, $(6+3)x = 36$, models this situation. How many pounds of each item did Jerry buy?
   a. 3 pounds b. 4 pounds c. 6 pounds d. 9 pounds
7. Solve for y: $w = \frac{x}{y}$
   a. $y = wx$ b. $y = \frac{w}{x}$ c. $y = \frac{x}{w}$ d. $y = x - w$
8. The length of Jenny's pet snake can be found by using the equation: $L = 3t + 9$, where t represents the age of the snake in years and L represents the length of the snake in inches. Jenny knows the length of the snake and wants to find its age. Which equation should Jenny use to find the age of the snake?
   a. $t = 1/3\ L + 3$ b. $t = 1/3\ L - 3$ c. $t = 1/3\ L - 9$ d. $t = 3L + 9$

9. To calculate the total cost of his music purchases, Daniel uses the expression $9x + 12y + 5$, where x represents the number of cassettes, y represents the number of CDs, and $5 is the shipping fee. If Daniel buys 3 cassettes and 2 CDs, what is the total price he will pay for the cassettes and CDs, including the shipping fee?

a. $24 b. $27 c. $51 d. $56

10. Which equation contains the points (5,3) and (2,6)?

a. $y = x + 2$ b. $y = x - 2$ c. $y = -x + 8$ d. $y = -x - 8$

11. The table shows the price for different numbers of business cards. Which equation models the total cost, C, of b business cards?

a. $C = b - 85$
b. $C = 5b + 10$
c. $C = 0.10b + 5$
d. $C = 0.05b + 10$

# of Cards	Total Cost ($)
100	15
200	20
300	25
400	30

12. David bought some blank video tapes and a video tape holder. The table shows the total cost in dollars, y, for x videotapes and a video tape holder. Which equation shows this relationship?

a. $y = x + 5$
b. $y = x + 10$
c. $y = 5x + 5$
d. $y = 5x + 10$

x	y
5	10
10	15
15	20
20	25

13. The table shows the number of times Randy has mowed Mr. Wheeling's lawn and the amount of money he has earned. Randy gives the customer a discount the first time he mows the lawn. Which equation describes the table?

a. $y = 5x + 7$
b. $y = 10x + 2$
c. $y = 12x + 9$
d. $y = 15x - 3$

# of Times Lawn Mowed (x)	Amount Earned (y)
1	$12
2	$27
3	$42
4	$57

Free Response

14. Caitlyn wants to save $300 for a new bike. She earns $9 an hour at her job. Write an expression to show the dollar amount Caitlyn still needs to save after working h hours.

15. A small box of at cereal has 5 fewer servings than a large box of the same cereal. Michael has 3 small boxes of oat cereal. The total number of servings in these small boxes is shown in the equation: $3(x - 5) = 27$. Solve the equation for x, the number of servings in a large box of cereal. Show all your work.