

P.I. A.A.4: Translate verbal sentences into mathematical equations

1. The product of -4 and an unknown number is -52 . Which equation matches this situation?

[A] $-4x = -52$ [B] $-52x = -4$

[C] $\frac{x}{-52} = -4$ [D] $\frac{-4}{x} = -52$

2. Which equation could be used to solve: 3 less than 5 times a number is 22?

[A] $\frac{22}{5}n = 3$ [B] $5n - 3 = 22$

[C] $3 - 5n = 22$ [D] $5n = 3 - 22$

3. Eight less than four times a number n is 48. Choose the appropriate equation.

[A] $8 - 4n = 48$ [B] $8 < 4n + 48$

[C] $4n - 8 = 48$ [D] $48 - 4 = 8n$

4. Use an equation to model the sentence.
How many raisins are left in a jar of 37 raisins after you have eaten some?

[A] $R = 37 + N$ [B] $R = \frac{N}{37}$

[C] $R = \frac{37}{N}$ [D] $R = 37 - N$

5. The fare for riding in a taxi is a \$1 fixed charge and \$0.40 per mile. The fare for a ride of d miles is \$11.20. Which equation could be used to find d ?

[A] $1(11.20 + d) = 1$

[B] $1 + 0.40d = 11.20$

[C] $0.40 + 1d = 11.20$

[D] $(0.40 + 11.20)d = 1$

6. Anita was selling Girl Scout cookies for the local Girl Scout Troop. Each box of cookies cost \$2.95. Mrs. Brown's purchase of Girl Scout cookies totaled \$14.75. Choose the equation to determine how many boxes of Girl Scout cookies were purchased by Mrs. Brown.

[A] $2.95 = 14.75(c)$ [B] $2.95(c) = 14.95$

[C] $2.95(14.75) = c$ [D] $2.95 + c = 14.95$

7. The football team is having a fundraiser to buy new uniforms. Football bumper stickers cost the football team \$2.00 each. The football team sells them for \$4.75. Which expression shows the number of bumper stickers (S) that must be sold for the football team to make a profit of \$137.50?

[A] $S = \$137.50 \div \2.75

[B] $S = \$137.50 \div \$4.75 - \$2.00$

[C] $S = \$137.50 \div \2.00

[D] $S = \$4.75 - \2.00

8. Mrs. Baker purchased a number of juice packs at a cost of \$0.30 each and a loaf of bread that cost \$1.19. The total cost of her purchases was \$2.99. Which equation would you use to determine how many juice packs Mrs. Baker purchased?
- [A] $\$0.30j + \$2.99 = \$1.19$
[B] $\$2.99 - \$1.19j = \$0.30$
[C] $\$0.30j + \$1.19 = \$2.99$
[D] $\$1.19j + \$0.30j = \$2.99$
9. Mr. and Mrs. Sogard borrowed \$4,200 from a bank, so that they could purchase an automobile. The interest on the loan was \$25 per month. They paid the loan back in three years with equal monthly payments. Choose the equation that can be used to calculate p the Sogard's monthly payment.
- [A] $p = \frac{4,200}{36} + 25$
[B] $p = [(4,200)(3)(12)] \div 36$
[C] $p = (4,200 \div 3) + 25$
[D] $p = (4,200)(3)(12) + 25$
10. Use an equation to model the number of bagels remaining in a package from which 4 bagels have been eaten.
11. Michael charges a flat rate of \$25 plus \$20 per hour to service furnace and air conditioners. Write a rule to describe his total fee as a function of the number of hours worked.
12. To have a party at the sports club, you must pay \$50 plus \$5 per guest. Write an equation that relates the number of guests x to the cost of the party y . Use your equation to find the cost of 12 guests.
13. You are 3 times older than your younger sister and you are 12 years old. Write an equation to solve for your sister's age. Will you be 3 times her age next year?
14. A person weighing 150 pounds walking at a rate of 2 mph burns about 4 calories/min. The same person can walk at a rate of 4.5 mph and burn about 7.3 calories/min. Write an equation to find the times a 150-lb person would need to walk at 2 mph and 4.5 mph in order to burn 300 calories.

[1] A

[2] B

[3] A

[4] D

[5] B

[6] B

[7] A

[8] C

[9] C

n = number of bagels remaining in the package,

b = total number of bagels originally in

[10] package, $n = b - 4$.

$f(h) = 20h + 25$ where h is the number of

[11] hours worked

[12] $y = 50 + 5x$; \$110

$3x = 12$; $\frac{1}{3} \times x = 12 \times \frac{1}{3}$; $x = 4$; Next year: 3(5)

[13] $= 13$; $15 = 13$; No.

[14] $4x + 7.3y = 300$