Name: _____
Period: _____

Applying Equations
Test Study Guide

Adam says that the expression $52 - 3y$ is equal to 20 when $y = 2$. Explain why Adam's answer is incorrect.

_____

Blake and three friends meet for lunch. His friends all get the same thing, but Blake gets a different lunch that costs $6. Write an expression to show the total amount that Blake and his friends spend. Then find the total amount that Blake and his friends spend if each friend spends $8.

_____

Ana's age is 8 years less than 4 times her sister's age. Write an expression for Ana's age. How old is Ana if her sister is 5 years old?

_____

Lewa's hiking backpack weighs 5 pounds less than $\frac{1}{2}$ the weight of Alani's hiking backpack. Write an expression to describe the weight of Lewa's backpack. How many pounds does Lewa's backpack weigh if Alani's backpack weighs 36 pounds?

Show your work.

_____

Which expression equals 6 when $a = 5$ and $b = \frac{1}{3}$? Circle all that apply.

A $9b^2 + 3a - 10$

B $a^2 - 20 - 3b$

C $3(a - 2) - a + 6b$

D $9b + ab$

_____

Haley's exercise routine takes 12 minutes. Let r represent the number of times that Haley exercised, and let T represent the total number of minutes she exercised. Tell whether each statement is *True* or *False*.

a. The equation $r + 12 = T$ can be used to find the total number of minutes that Haley exercised. ☐ True ☐ False

b. It takes Haley 36 minutes to do her exercise routine 3 times. ☐ True ☐ False

c. If Haley spent a total of 1 hour doing her exercise routine, then she did the routine 6 times. ☐ True ☐ False

d. $12r$ represents the total number of minutes that Haley exercised. ☐ True ☐ False

---

Hector buys a shirt and a tie. The shirt costs $34, which is $18 more than the cost of the tie. Olivia and Max each write an equation to find the cost of the tie t. Is one equation, both equations, or neither equation correct? Explain how you know. Solve each correct equation.

Olivia: $t + 18 = 34$ Max: $34 - t = 18$

Elisa is saving an equal amount each week for 8 weeks to buy a video game that costs $40. How much is she saving each week?

A $4   **C** $32

B $5   **D** $48

Jesse chose **C** as the correct answer. How did he get that answer?

_____

| Which equation has a solution of 4? Select all that apply.

A $12x = 3$ **C** $10 + x = 14$

B $6x = 24$ **D** $x - 4 = 8$

_____

Solve: 2/7 + x = 5/7

_____

Solve: 12.5- x=4.25

_____

Mary and Lucy are walking. Mary walks 2.1 miles farther than Lucy.

Write and solve an equation for the number of miles Lucy (using the variable l) walks if Mary walks 4.5 miles.

Then, write and solve an equation for the number of miles Mary walks (using the variable m) if Lucy walks 3.2 miles.