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4.OA.A.3 Writing and Solving Equations

4.OA.A.3: Solve multistep word problems posed with whole numbers using the four operations.

1. Solve the equation and find ***h***.

   a. ***h*** + 3 = 10
   b. ***h*** + 3 + 7 = 20
   c. 2***h*** + 12 = 24
   d. ***h*** × 8 = 64
   e. ***h*** ÷ 5 = 3
   f. 12 = 36 ÷ ***h***
   g. 2 × ***h*** × 3 = 72
   h. 9 × ***h*** = 36

Solution:
a. _____
b. _____
c. _____
d. _____
e. _____
f. _____
g. _____
h. _____

2. Write an equation using a variable for the unknown. What does the variable represent?

   a. William jogged a total of 19 miles. He first jogged 10 miles at 5 miles an hour. The rest, he jogged at a different speed. He took a total of 5 hours.
   b. The total number of books divided equally among 7 kids at a class is 15 books for each student.
   c. Michael had 12 sheets of paper. He used 5 sheets for his art project. He gave the rest to two of his friends.
   d. Forty-two cards divided equally among seven players.
   e. The equal numbers of paper clips in 5 boxes make a total of 70.

Solution:
a.
b.
c.
d.
e.

3. Cecille is putting cookies in 8 jars. She puts 6 cookies in each jar. She still has 4 cookies left. How many cookies does she have in total?

Solution:

4. A worker painted 4 walls in 8 hours. How much time did he take to paint each wall?

Solution:

5. Sophia studies four subjects each day for four days. Her total study time was 32 hours. How much time did she spend to study one subject?

Solution:

6. Which equation is true if ***b*** = 8?

   A. 2***b*** × 4 = 60
   B. 2***b*** ÷ 4 = 4
   C. 2***b*** ÷ 3 = 4 × 3
   D. ***b*** – 3 = 6

Solution:

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Answer Key

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1. Solve the equation and find ***h***.

   a. ***h*** + 3 = 10
   b. ***h*** + 3 + 7 = 20
   c. 2***h*** + 12 = 24
   d. ***h*** × 8 = 64
   e. ***h*** ÷ 5 = 3
   f. 12 = 36 ÷ ***h***
   g. 2 × ***h*** × 3 = 72
   h. 9 × ***h*** = 36

Solution:

a. ***h*** = 10 – 3 = 7
b. ***h*** = 20 – 7 – 3 = 10
c. ***h*** = 24 – 12 ÷ 2 =6
d. ***h*** = 64 ÷ 8 = 8
e. ***h*** = 3 × 5 =15
f. ***h*** = 36 ÷ 12 = 3
g. ***h*** = 72 ÷ 3 ÷ 2 = 12
h. ***h*** = 36 ÷ 9 = 4

2. Write an equation using a variable for the unknown. What does the variable represent?

   a. William jogged a total of 19 miles. He first jogged 10 miles at 5 miles an hour. The rest, he jogged at a different speed. He took a total of 5 hours.
   b. The total number of books divided equally among 7 kids at a class is 15 books for each student.
   c. Michael had 12 sheets of paper. He used 5 sheets for his art project. He gave the rest to two of his friends.
   d. Forty-two cards divided equally among seven players.
   e. The equal numbers of paper clips in 5 boxes make a total of 70.

Solution:

a. 10 + k = 19
   k = distance at a different speed
b. b ÷ 7 = 15
   b = number of books
c. 12 – 5 – r = 0
   r = sheets given to two friends
d. 42 ÷ 7 = p
   p = number of cards per player
e. 5 × c = 70
   c = number of paper clips in each box

3. Cecille is putting cookies in 8 jars. She puts 6 cookies in each jar. She still has 4 cookies left. How many cookies does she have in total?

Solution:
8 × 6 + 4 = 52
Answer: 52 cookies

4. A worker painted 4 walls in 8 hours. How much time did he take to paint each wall?

Solution:
8 ÷ 4 = 2
Answer: 2 hours

5. Sophia studies four subjects each day for four days. Her total study time was 32 hours. How much time did she spend to study one subject?

Solution:
32 ÷ 4 ÷ 4 = 2
Answer: 2 hours

6. Which equation is true if ***b*** = 8?

   A. 2***b*** × 4 = 60
   B. 2***b*** ÷ 4 = 4
   C. 2***b*** ÷ 3 = 4 × 3
   D. ***b*** – 3 = 6

Solution:
B. 2***b*** ÷ 4 = 4