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4.OA.A.3 Evaluating Algebraic Expressions

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

1. Find the value of the expression if $h = 3$.
   a. $3h - (21 \div 3 - 2 \times 2)$
   b. $10 + (h - 2)$
   c. $(2 \times 4 - 12 \div 3) - h \div 3$
   d. $(9 + 4h \div 6) + 3 \times 4$

   Solution:
   a. _____
   b. _____
   c. _____
   d. _____

2. Find the value of each expression.
   a. $5 + (15 \div 3) \times 5 \div 5$
   b. $3 \times 8 \div (9 - 3) + 8$
   c. $4 \times (3 \times 2) + 20 \div 4$
   d. $3 \times (14 \div 7) + 9$

   Solution:
   a. _____
   b. _____
   c. _____
   d. _____

3. Solve the problems using an expression.
   a. Simon practiced shooting for 3 hours on Thursday. On Friday, he practiced double the number of hours he practiced on Thursday. On Saturday, he practiced a total of 7 hours. How many hours did he practice shooting in total in all three days?
   b. Beth and Miguel sold 52 lemonades together in a week. Beth sold 35 lemonades. How many lemonades did Miguel sell?

   Solution:
   a.

   b.

4. What is the value of expression $8y - (3 \times 5 + 4)$ if $y = 5$?
   A. 11   C. 21
   B. 18   D. 25

   Solution:

5. Jacob had 80 cents. He gave two quarters and a dime to his brother. Which expression shows the number of cents that Jacob has now?
   A. $80 - (2 \times 25 + 10)$ C. $80 - 25 - 25 - 10$
   B. $(80 - 2) \times 25 + 10$ D. $80 - 25 \times 2 + 10$

   Solution:

6. Which expression has a value of 40?
   A. $30 + 3 \times 7 + 3 \times 15$ C. $30 + (3 \times 5) + 3 \times 15$
   B. $30 - 3 \times 5 + 3 \times 15$ D. $30 - 3 \times 5 - (3 \times 15)$

   Solution:

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

1. Find the value of the expression if $h = 3$.
   a. $3h - (21 \div 3 - 2 \times 2)$
   b. $10 + (h - 2)$
   c. $(2 \times 4 - 12 \div 3) - h \div 3$
   d. $(9 + 4h \div 6) + 3 \times 4$

   Solution:
   a. $9 - (7 - 4) = 9 - 3 = 6$
   b. $10 + 1 = 11$
   c. $8 - 4 - 1 = 4 - 1 = 3$
   d. $(9 + 12 \div 6) + 12 = 9 + 2 + 12 = 23$

2. Find the value of each expression.
   a. $5 + (15 \div 3) \times 5 \div 5$
   b. $3 \times 8 \div (9 - 3) + 8$
   c. $4 \times (3 \times 2) + 20 \div 4$
   d. $3 \times (14 \div 7) + 9$

   Solution:
   a. $5 + 5 \times 1 = 5 + 5 = 10$
   b. $24 \div 6 + 8 = 4 + 8 = 12$
   c. $4 \times 6 + 5 = 24 + 5 = 29$
   d. $3 \times 2 + 9 = 6 + 9 = 15$

3. Solve the problems using an expression.
   a. Simon practiced shooting for 3 hours on Thursday. On Friday, he practiced double the number of hours he practiced on Thursday. On Saturday, he practiced a total of 7 hours. How many hours did he practice shooting in total in all three days?
   b. Beth and Miguel sold 52 lemonades together in a week. Beth sold 35 lemonades. How many lemonades did Miguel sell?

   Solution:
   a. $3 + (2 \times 3) + 7 =$
   $3 + 6 + 7 = 9 + 7 = 16$
   Answer: 16 hours

   b. $52 - 35 = 17$
   Answer: 17 lemonades

4. What is the value of expression $8y - (3 \times 5 + 4)$ if $y = 5$?
   A. 11   C. 21
   B. 18   D. 25

   Solution:
   C. 21

5. Jacob had 80 cents. He gave two quarters and a dime to his brother. Which expression shows the number of cents that Jacob has now?
   A. $80 - (2 \times 25 + 10)$ C. $80 - 25 - 25 + 10$
   B. $(80 - 2) \times 25 + 10$ D. $80 - 25 \times 2 + 10$

   Solution:
   A. $80 - (2 \times 25 + 10)$

6. Which expression has a value of 90?
   A. $30 + 3 \times 7 + 3 \times 15$ C. $30 + (3 \times 5) + 3 \times 15$
   B. $30 - 3 \times 5 + 3 \times 15$ D. $30 - 3 \times 5 - (3 \times 15)$

   Solution:
   C. $30 + (3 \times 5) + 3 \times 15$