SmartMathz

Writing and Defining Expressions

Grade 5 Algebra Worksheet
Date:_____   Name:_____

1. Five friends evenly divided up an n-slice pizza. One of the friends, Michelle, ate 1 fewer slice than he receive. How many slices of pizza did Michelle eat?

   Answer:

2. Write an expression for each problem. Define a variable if you use one.

   a. Harris had 14 needles in his sewing kit but he lost p needles.

   b. The beach is 18 miles farther than the park m.

   c. In Michelle's sewing kit, there are 5 bundles of thread. Each bundle has x feet of thread.

   d. Margaret has 15 yards of fabric and she is making dresses for x dolls.

   e. Sophie bought some ice cream cones which cost $24. She paid $30.

   f. A piece of ribbon is 20cm long. Kim cut it into 4 pieces to do her 4 sister's hair.

   Answer:

   a. _____

   b. _____

   c. _____

   d. _____

   e. _____

   f. _____

3. A large pizza costs $6. Each topping you add on costs $1.50. How much would it cost to get a large cheese pizza with c toppings added?

   Answer:

4. Sarah had \$300. Then, she and her classmates bought a present for their teacher, evenly splitting the \$$n$ cost among the 24 of them. How much money does Sarah have left?

Answer:

5. Define a variable and explain what it represents. Use the variable to write an expression for each problem.

a. Olivia received \$65 for her birthday. She used some of that money to buy 3 shirts priced \$$p$ each.

Answer:

b. Liam earns \$13 per hour delivering cakes. She worked for \$$n$ hours this week. Unfortunately, she was charged \$16 for a late delivery on Tuesday.

Answer:

c. Sarah shared a cab with her friends. They evenly divided the \$$j$ fare among the three of them. Sarah also paid a \$3 tip. How much did Sarah pay in total?

Answer:

d. Sophie bought 3 bottles of water, 500ml each. After Sophie and her sister drank w ml from the bottles, they have a total of 300ml of water left.

Answer:

e. A roll of ribbon is z inches long. There are 6 colors of ribbons. Maxwell used 2 inches from each roll.

Answer:

![SmartMathz logo]

Writing and Defining Expressions

Grade 5 Algebra Answer Sheet

1. Five friends evenly divided up an n-slice pizza. One of the friends, Michelle, ate I fewer slice than he receive. How many slices of pizza did Michelle eat?

Answer:

$\dfrac{n}{5} - 1$

Workings:

Each friend have $\dfrac{n}{5}$ slice of the pizza.

Michelle ate $\dfrac{n}{5} - 1$.

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2. Write an expression for each problem. Define a variable if you use one.

   a. Harris had 14 needles in her sewing kit but she lost p needles.

   b. The beach is 18 miles farther than the park m.

   c. In Michelle's sewing kit, there are 5 bundles of thread. Each bundle has x feet of thread.

   d. Margaret has 15 yards of fabric and she is making dresses for x dolls.

   e. Sophie bought some ice cream cones which cost \$24. She paid \$30.

   f. A piece of ribbon is 20cm long. Kim cut it into 4 pieces to do her 4 sister's hair.

Answer:

   a. $14 - p$, **where** $p =$ **number of lost needles.6**

   b. $18 + m$, **where** $m =$ **distance to park.**

   c. $5 \times x$, **where** $x =$ **length of each thread.**

   d. $\dfrac{15}{x}$, **where** $x =$ **number of dolls.**

   e. $\$30 - \$24$

   f. $\dfrac{20}{4}$

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3. A large pizza costs \$6. Each topping you add on it costs \$1.50. How much would it cost to get a large cheese pizza with c toppings added?

Answer:
$\$6 + \$1.50c$

Workings:
Large pizza $= \$6$
Each topping $= \$1.50$
c toppings added $= \$1.50c$
So, large pizza with c toppings $= \$6 + \$1.50c$

4. Sarah had $300. Then, she and her classmates bought a present for their teacher, evenly splitting the $\$n$ cost among the 24 of them. How much money does Sarah have left?

Answer:
$\$300 - \dfrac{\$n}{24}$

Workings:
Sarah's money $= \$300$
Number of Sarah's classmates $= 24$
Cost of present bought $= \$n$
Money Sarah has left $= \$300 - \dfrac{\$n}{24}$

5. Define a variable and explain what it represents. Use the variable to write an expression for each problem.

a. Olivia received $65 for her birthday. She used some of that money to buy 3 shirts priced $\$p$ each.

Answer:
$\$65 - \$3p$**, where** $p =$ **price of each shirt.**

b. Liam earns $13 per hour delivering cakes. She worked for $\$n$ hours this week. Unfortunately, she was charged $16 for a late delivery on Tuesday.

Answer:
$\$13n - \$16$**, where** $n =$ **total hours Sunny worked for the week.**

c. Sarah shared a cab with her friends. They evenly divided the $$j$ fare among the three of them. Sarah also paid a \$3 tip. How much did Sarah pay in total?

Answer:

$\dfrac{\$j}{3} + \$3$, **where** $j =$ **total amount of fare.**

d. Sophie bought 3 bottles of water, 500ml each. After Sophie and her sister drank w ml from the bottles, they have a total of 300ml of water left.

Answer:

(3×500) **-** w, **where** $w =$ **amount of water Sophie and her sister drank.**

e. A roll of ribbon is z inches long. There are 6 colors of ribbons. Maxwell used 2 inches from each roll.

Answer:

$6 \times (z - 2)$, **where** $z =$ **length for each color of ribbons.**