

Variables, Expressions, and Formulas

Name Kcy

1. Mary earns an allowance of \$5 per week. She also earns \$6 per hour baby-sitting. Write an expression that would represent the total amount of money she earns in one week. If Mary babysits for 6 hours, how much money will she make?

$5 + 6h$ \$41

2. The Food Lion grocery store advertises a special on 2-liter bottles of soft drinks. The first bottle purchased is \$1.50 and each bottle after that is \$1. Write an expression that can be used to find the total cost. Find the total cost if you purchase 5 bottles.

$1(5) + 50 = \$5.50$ $1b + .50$ $b = \# \text{ of bottles}$

3. One Middle School sold tickets for a school play. The price of an adult ticket was \$5, and the price of a student ticket was \$3. Write an expression that represents the total amount of money collected. Suppose 150 adult tickets and 100 student tickets were sold. How much money was collected?

$a = \# \text{ adult}$
 $s = \# \text{ student}$ $5a + 3s$ $5(150) + 3(100) = \$1,050$

4. Ms. Li's car needs to be repaired. The cost of the repair is going to be \$90 per hour for labor and an additional \$220 for parts. Write an expression that would represent the cost of getting the car repaired if a mechanic works on it for h hours. Find the total cost if the mechanic works on the car for 4 hours.

$h = \# \text{ hours}$ $220 + 90h$ $220 + 90(4) = \$580$

5. The formula that is used to convert Fahrenheit (F) to Celsius (C) is $5 \cdot (F - 32) \div 9$. Convert 77°F to degrees in Celsius.

25°C

6. In order to encourage recycling, city of Taiyuan is offering 20 cents for every kilogram of newspapers collected, five cents per plastic bottle. Write an expression for the total amount earned from recycling. If Chen brings in ten kilograms of newspapers, 32 plastic bottles, how much will he receive?

$n = \text{kg of newspaper}$
 $p = \text{plastic bottle}$ $.2n + .05p$
 $.2(10) + .05(32) = \cancel{\$2.16} = \$3.60$

7. Borders book store is advertising a sale. The price of hardback books is \$4.50 and the price of paperback books is \$2.50. Write an algebraic expression that can be used to find the total amount of money spent at the bookstore. Suppose Tom buys 3 hardback books and 2 paperback books. Find the total amount he spent at the book sale.

$h = \text{hardback book}$
 $p = \text{paperback book}$ $4.50h + 2.50p$
 $4.50(3) + 2.50(2) = \$18.50$

8. Find the total area of a rectangle tile using the formula lw with the length is 6in and a w is 8in.

$A = lw$ $(6)(8) = 48 \text{ in}^2$

9. Ms. Li want to make a rectangular garden. The length of the garden is 8ft and width of the garden is 7ft. Use the formula $2l + 2w$ to find the perimeter of the garden.

$2l + 2w$
 $2(8) + 2(7) = 30 \text{ ft}$

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7. Borders book store is advertising a sale. The price of hardback books is \$8.50 and the price of paperback books is \$4.50. Write an algebraic expression that can be used to find the total amount of money spent at the bookstore. Suppose Tom buys 6 hardback books and 4 paperback books. Find the total amount he spent at the book sale.
8. Find the total area of a rectangle tile using the formula lw with the length is $6in$ and a w is $8in$.
9. Find the volume of a cubical packing box using the formula s^3 if the side length is $2ft$.
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