

Set-Up Problems

Often on the GED Mathematics Test, you will not have to solve a word problem—you will only have to decide the proper way to solve the problem by showing how to set up or write the expression for its solution.

Setting up a problem involves being able to write correct mathematical expressions when given written information. Study the following examples.

| Written Information | Mathematical Expression |
|---|---------------------------|
| 1. the amount earned after working 40 hours per week at \$5 per hour for 10 weeks | $40 \times \$5 \times 10$ |
| 2. the average time worked per day if you worked 5 hours Monday, 7 hours Tuesday, and 6 hours Wednesday | $\frac{5 + 7 + 6}{3}$ |
| 3. the cost of 2 cans of tomatoes if they sell for 3 for \$2 | $\frac{\$2}{3} \times 2$ |

Example: Sam worked for 10 hours this week at \$5.50 per hour, and also worked 8 hours at \$6.00 per hour. Which of the following expressions describes Sam's earnings for the week?

- (1) $10 + \$5.50 + 8 + \6.00
- (2) $10(\$5.50 + \$6.00) + 8$
- (3) $10(\$5.50) + 8(\$6.00)$
- (4) $10(\$5.50) \times 8(\$6.00)$
- (5) $10(\$5.50) \div 8(\$6.00)$

As you approach the problem, look first at the 10 hours of work. For this time period, the earnings are 10 times \$5.50. Then look at the 8 hours of work. Multiplying 8 hours times the \$6.00 rate gives these earnings. The correct choice is Option 3 or the sum of the two products. Since you are not asked to find the solution, stop after you find the correct set-up.

Directions: Write a numerical expression for each of the exercises below on the lines provided.

1. Steve earns \$19,500 annually. Floyd earns \$1,100 per month. Write a numerical expression that shows how much more per year Steve earns than Floyd.

Numerical Expression: _____

2. A sixty-minute television program has 5 commercial breaks. Each break lasts 2 minutes. Write a numerical expression that shows the actual length of the program.

Numerical Expression: _____

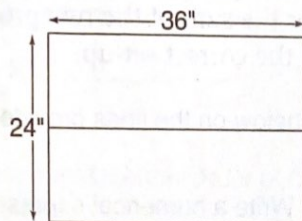
3. A bolt of fabric contained 30 yards of fabric. The store sold twenty-seven yards of the fabric at the regular price of \$3 per yard. The rest was sold at the sale price of \$1 per yard. Write a numerical expression that shows the total amount of money the store received for the fabric from the bolt.

Numerical Expression: _____

Directions: Choose the one best answer to each question.

- Ernesto is paid \$125 a week plus a \$5 commission on each item that he sells in 28 days. Which numerical expression below determines the number of items he sold?
 - $\$125 + \frac{\$160}{\$5}$
 - $\$125 + \$5(28)$
 - $\frac{\$125}{(28)(\$5)}$
 - $\$125 - \$5(28)$
 - Not enough information is given.
- Last year, the weekly cost of food for a family of four was \$100. This year, the weekly cost is \$110. Which of the following expressions shows the difference in the average cost per year for one family member?
 - $\$110 \div 4$
 - $(\$110 - \$100) \div 4$
 - $(\$110 \div 4) + (\$100 \div 4)$
 - $(\$110 \div 4) + \100
 - $52(\$110 - \$100) \div 4$
- Which expression below determines the amount of each of Marcy's 24 monthly car payments if the total amount of her car loan is \$6,096?
 - $24 + \$6,096$
 - $\$6,096 - 24$
 - $24(\$6,096)$
 - $\frac{\$6,096}{24}$
 - $12 \times \frac{\$6,096}{24}$
- A postal carrier had three packages that had weights of 40 lb., 31 lb., and 51 lb. Which of the following expressions determines the average weight of the packages?
 - $(40 + 31 + 51) \div 3$
 - $(40 + 31) + 51 \div 3$
 - $40 + 31 \div 51 + 3$
 - $3(40 + 31) + 51$
 - $40 + 31 + 51(3)$

Question 3 refers to the following diagram.



- Which expression determines the number of books, each 2" thick, that will be needed to fill the two shelves of the bookcase in the diagram above?
 - $2 + (36 \div 2)$
 - $(36 \div 2) - 2$
 - $2(36 \div 2)$
 - $(2 \times 2) + 36$
 - $(2 \times 2) \div 36$
- Calvin drives 657 miles per week going to and from work. His car averages 18 miles per gallon of gas. Which expression below determines the total distance that Calvin travels in 3 weeks?
 - $3(657)$
 - $657 + 3$
 - $657 - 3$
 - $657 \div 3$
 - $657 \div 18 \times 1.09$