

Grade 8 Mathematics Worksheet

Algebraic equations and expressions

Questions:

1. Of your classmates, $\frac{1}{4}$ walk to school and $\frac{1}{3}$ come to school by taxi. The remaining 25 get dropped off by their parents. How many learners are there in your class?

A) 30
B) 60
C) 17
D) 34

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Solution

Algebraic: Let the number of learners in class be x :

$$x = \frac{1}{4}x + \frac{1}{3}x + 25$$

$$\therefore 12x = 3x + 4x + 300$$

$$\therefore 12x - 7x = 300$$

$$\therefore 5x = 300$$

$$\therefore x = 60$$

Answer is (B)

Numerical:

$\frac{1}{3} + \frac{1}{4} = \frac{4+3}{12} = \frac{7}{12}$ of the learners walk or come by taxi. The remaining 25 come with their parents and this accounts for the other $\frac{5}{12}$ that makes up the whole $\left(\frac{12}{12}\right)$ for the class. So

$$\frac{5}{12} \text{ of } x = 25$$

$$\text{That will thus be: } x = \frac{25 \times 12}{5} = 60 \text{ learners. (B)}$$

This question is difficult. Learners do not need algebra here, but it sure makes it easier to solve.

The question can be asked at a grade 7 level, but then the tools that learners will use will be different.