



SOME BASIC TIPS TO SOLVE VERBAL PROBLEMS

The major problem faced by children is in approaching the word problems – whether in Algebra, Mensuration or Trigonometry. Children start learning algebra and mensuration in lower classes and trigonometry in standard nine. The basic idea in finding solutions for verbal problems is to convert them into mathematical version.

In algebra letters are used to represent numbers. By using letters and mathematical symbols short algebraic statements replace lengthy verbal statements. For example Seven times a number as $7n$ and the perimeter of a square equals 4 times the length of its side as $p = 4a$ etc. Translation of verbal statements into an equation is the basic skill in solving a word problem. Choose letters to represent unknowns. The rule of equality, the same operation using equal numbers may be performed on both sides except division by 0.

To convert the verbal statements into equations children should be familiar with words denoting the basic mathematical operations.

Words denoting addition

Sum, plus, gain, increase, rise, expand, more than, greater than, enlarge, grow etc.

Words denoting subtraction

Difference, minus, loss, decrease, drop, lower, less than, smaller than, fewer than, shorten, depreciate, diminish etc.

Words denoting multiplication

Multiplied by, times, product, twice, double, triple, etc

Words denoting division

Divided by, quotient, ratio, half, etc

For example a increased by twice b will be represented as $a + 2b$

PLAN FOR SOLVING A WORD PROBLEM



- 1) Read the problem thoroughly.
- 2) Choose variables to represent unknown quantities.
- 3) Write an open statement by using facts in the problem.
- 4) Find the solution set of the open sentence.
- 5) Check your results with the words of the problem.

For example consider the following problem.

4 chairs and 3 tables cost Rs.2100, 5 chairs and 2 tables cost Rs.1750. Find the cost of one table and one chair separately.

Here the two unknown quantities are cost of one chair and cost of one table. Choose variables to represent them.

Let cost of one chair be Rs. X and cost of one table be Rs. Y .

Next step is to write a statement using the facts given in the problem.

Cost of 4 chairs = Rs. $4X$.

Cost of 3 tables = Rs. $3Y$.

Their total cost = $4X + 3Y$ which equals Rs.2100

Hence the first equation is $4X + 3Y = 2100$.

Similarly the second equation is $5x+2y=1750$

After solving this to get $X = \text{Rs.}150$ and $Y = \text{Rs.}500$ to check with the problem,

Cost of 4 chairs = $4 \times 150 = \text{Rs.}600$.

Cost of 3 tables = $3 \times 500 = \text{Rs.}1500$.

Total cost = Rs.2100.

Once children have understood the skills in converting the verbal statements into equations solving them becomes an easy procedure.

In mensuration and trigonometry pictures make problems more easier. Mathematics often make sense if you picture the problem before you start to answer it. Formulae play a great role in solving problems. For learning formulae and other data creating own way like using nemonics, pictures etc are very useful.

For example SACATOA for

Sine – Opposite

Cosine – Adjacent

Tangent – Opposite & Adjacent



Effective revision replaces shallow learning with learning in some depth, replaces bewilderment with confidence. Regular practice is essential to master the skills of solving word problems.

Maths is a 'building block' subject in that you need to understand the bottom bricks in the wall before you can fit other ones on to them. It is best to start the revision from the point where you last clearly understood a particular brick and how it is fitted into the wall. Build up your confidence in a bit-by-bit 'brick by brick' way.

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