Problem - Countdown

# Outline

The popular British TV program countdown had a math challenge element and we’d like you to write a program to solve the problem.

6 numbers are the input numbers used (which would have been chosen by the candidate) and 1 number is the target. The objective is to use the 6 numbers input and using only addition, subtraction, multiplication or division, to generate the target or generate as close as possible to either side of the target.

Each input number may only be used once. You can assume the target number and input numbers will always be under 1024.

Write a program which takes 7 numbers as arguments. The first six numbers are the input numbers described above with the 7th number being the target. The output of the program should be a solution required to generate the target from those six numbers or the closest possible solution either side of the target number.

Only one correct solution is required to be output, if multiple solutions are available.

e.g.

./program 1 2 3 4 5 6 12

2 \* 6 = 12

./program 5 8 6 25 13 87 390

13 \* 6 \* 5 = 390

# Requirements

* Try to use appropriate OO methodologies where possible (e.g. encapsulation)
* Where your program is written in an interpreted language like ruby or python, please say which version you’ve used
* Include appropriate testing routines
* No use of third party libraries for the main code. The intent of the problem is to demonstrate the ability to write the particular data structures & algorithms that are most applicable to solve this problem.