Assignment #6: Find The Described Numbers

Example: One number is 3 less than 12 times the other. The sum of the numbers is 62. Find the numbers.

Solution: Label the "other" number as x and "the" number as 12x - 3. Then, because their sum is 62, we can write x + 12x - 3 = 62. We solve to get x = 5 and 12x - 3 is 57. So the solution is 5 and 57.

Note: it's often a good idea to call x the number that got "compared to" first. In this case, the "other" was compared to" first, so we call it x. Then "one number is 3 less than 12 times the other" means the "one number" is 12x - 3.

Problems

Find the described number(s).

1. The larger is three less than 5 times the smaller. The sum of the numbers is 21.

2. The two numbers add up to zero. Twice the larger, minus the smaller, is six.

Solve

3. a. $2-4(y+5)=-4y-18$ b. $6c+23=5(c-4)+c$ c. $2x+7(x+7)-2=52-8x-5$

4. a. $8(x+5)-5=2-(3x+3)$ b. $7(x+22)=-2(x-5)$ c. $1-2(c+3)=-(1-2c)$

Evaluate with x=-1, y=-2, z=-3

5. $xy^2 - yx^2 - z^{(xy)}$

6. Find the smallest positive integer half of which is a perfect square and one third of which is a perfect cube.

(L): Given that (A ☺ B) = 2B - 3A, find x such that x ☺ (x+3) = 1