Math 5b, homework 26.

Review the problem:

There are 4 people in the family. If Masha's scholarship is doubled, the total income of the whole family will increase by 5%; if instead the mother's salary is doubled – by 15%; if the father's salary is doubled – by 25%. By what percentage will the total income of the whole family increase if the grandfather's pension is doubled?

M is Masha' income, m is mother's salary, d is dad's salary and g is grandfather's retirement benefits. Total family income is

$$M + m + d + g = I$$

If Masha's income is doubled:

$$2M + m + d + g = 1.05I$$

If mother's income is doubled:

M + 2m + d + g = 1.15I

If dad's income is doubled:

M + m + 2d + g = 1.25I

If grandfather's income is doubled:

$$M + m + d + 2g = xl$$

(2M + m + d + g) + (M + 2m + d + g) + (M + m + 2d + g) + (M + m + d + 2g)= 1.05*I* + 1.15*I* + 1.25*I* + *xI* 

5M + 5m + 5d + 5g = 3.45I + xI5(M + m + d + g) = 3.45I + xIBut we know, that

M + m + d + g = I

5I = 3.45I + xI5 = 3.45 + x; x = 5 - 3.45; x = 1.55

Relax and have a good week!

