Problem of the Week
Problem B and Solution
Raise a Buck at Starstruck’s

Problem
Last year, the ten employees at Starstruck’s had an average annual income of $30,000 each. This year, three of them received equal raises in pay, raising the total annual income for all ten employees to $303,000.

a) How much was the raise received by each of the three employees?

b) What is the new average annual income of each of the ten employees this year?

c) If the word “equal” is deleted from the given information, could you find the answer to part a)? Explain your reasoning.

Solution

a) Last year, the total income for all 10 employees was $30,000 \times 10 = $300,000. Thus the raises totaled $303,000 - $300,000 = $3,000. So each of the three employees received a raise of $3,000 \div 3 = $1,000.

b) After the new raises, the new average annual income was $303,000 \div 10 = $30,300.

c) If the word ‘equal’ is deleted from part a), all we would know is the total of the raises, $3,000. So we could not find individual raises, as any three amounts that sum to $3,000 would be possible.