1

Material A costs $3 per kilogram, and Material B costs $5 per kilogram. If 10 kilograms of Material K consists of x kilograms of Material A and y kilograms of Material B, is $x > y$?

(1) $y > 4$
(2) The cost of the 10 kilograms of Material K is less than $40.

2

A contractor combined x tons of a gravel mixture that contained 10 percent gravel G, by weight, with y tons of a mixture that contained 2 percent gravel G, by weight, to produce z tons of a mixture that was 5 percent gravel G, by weight. What is the value of x ?

(1) $y = 10$

(2) $z = 16$

3

In what ratio should Solution 1 and Solution 2 be mixed to get a solution which contains water and milk in the ratio of 3:7?

(1) Solution 1 contains water and milk in the ratio 1:9 and Solution 2 contains water and milk in the ratio 2:3
(2) The amount of milk in 100 gallon of solution 1 is 80 gallons more than that of water in the same solution. Further, 50 gallons of Solution 2 contains 10 gallons more milk than water.

4

One kilogram of a certain coffee blend consists of x kilogram of type I coffee and y kilogram of type II coffee. The cost of the blend is C dollars per kilogram, where $C = 6.5x + 8.5y$. Is $x < 0.8$?

(1) $y > 0.15$

(2) $C >= 7.30$

5

Food -- Number of Calories per Kilogram -- Number of Grams of Protein per Kilogram
S ----- 2.000 ----------150
T ----- 1,500 ----------90

The table above gives the number of calories and grams of protein per kilogram of foods S and T. If a total of 7 kilograms of S and T are combined to make a certain food mixture, how many kilograms of food S are in the mixture?

(1) The mixture has a total of 12,000 calories.
(2) The mixture has a total of 810 grams of protein.