

Answer on Question #82790 – Math – Algebra

Question

Ryan paid \$19.99 for a 7.98-kg bag of dog food. A few weeks later, he paid \$20.38 for each bag. Finally, state which bag is better but based on the unit price. Round your answers to the nearest cent(hundred).

Solution

Let's set that measurement unit is 1kg. Thus, the unit price for the first bag (U_{pr1} , \$ per unit) is

$$U_{pr} = \frac{\$19.99}{7.98 \text{ kg}} = \$ 2.51 \text{ per kg}$$

Because we have no other data then we imply that second bag has the same weight as the first (7.98 kg), unit price for 2nd bag (U_{pr2} , \$) is

$$U_{pr2} = \frac{\$ 20.38}{7.98 \text{ kg}} = \$2.55 \text{ per kg}$$

Compare U_{pr1} and U_{pr2} :

$$U_{pr1} - U_{pr2} = \$ 2.51 - \$ 2.55 = -\$ 0.04 \text{ (per kg) is negative, hence } U_{pr2} > U_{pr1}.$$

It means that a unit price for the second bag is higher than that for the first bag.

Answer: the first bag is better based on the unit price.