

Subject 14

SEQUENCES

Please do not write on this exam paper and give it back at the end of the test

A wholesaler sells packets of dried soup to supermarkets. The more packets a supermarket purchases, the cheaper the cost per packet and consequently the greater the profit they can make. The wholesaler's price structure is as follows :

- For 1,000 packets of dried soup the cost per packet is 30 cents
- For 2,000 packets of dried soup the cost per packet is 29.5 cents
- For 3,000 packets of dried soup the cost per packet is 29 cents

And this pattern of pricing continues.

- a. Represent the selling cost per 1,000s of dried soup as a sequence of numbers (listing the first 6 terms).
- b. What is the price per packet of dried soup if a supermarket purchases 5,000 packets?
- c. What is the total cost for the purchase of 6,000 packets of dried soup?
- d. A supermarket chain purchases 20,000 packets of soup. What is the cost per packet and the total cost of the purchase ?
- e. This wholesaler's formula is meant to apply for orders up to 20,000. What is wrong with the wholesaler's price structure if the formula is applied to larger orders and then what is the ideal quantity that a supermarket should purchase ? Explain.

Vocabulary:

Wholesaler: grossiste

To purchase: acheter