Ryan Miller wanted to make some money at the flea market. He purchased 55 small orchids from the nursery for a total of $233.75, three bags of potting soil for $2.75 each, and 55 ceramic pots at $4.60 each. After planting the orchids in the pots Ryan sold each plant for $15.50 at the flea market.

What was his total cost per potted plant?

Solution:

In this task we should find a cost of per unit (potted plant). The cost per unit is derived from the variable costs and fixed costs incurred by a production process, divided by the number of units produced. Variable costs, such as direct materials, vary roughly in proportion to the number of units produced, though this cost should decline somewhat as unit volumes increase, due to greater purchasing discounts. Examples of variable costs include sales wages, cost of maintaining inventory and raw materials used to make the product. A fixed cost is a cost that does not vary in the short term, irrespective of changes in production or sales levels. Fixed costs should remain unchanged no matter how many units are produced, though they can increase as the result of additional capacity being needed (known as a step cost, where the cost suddenly steps up to a higher level once a specific unit volume is reached). Examples of fixed costs are: amortization, insurance, interest expense, property taxes and rent. In our case we don't have fixed costs. We can calculate variable costs. To calculate total variable costs, the formula is:

$$Total\ quantity\ of\ units\ produced\ x\ Variable\ cost\ per\ unit\ =\ Total\ variable\ cost$$

In our task total quantity of units purchased is 55 orchids, variable cost is $233.75, variable cost per unit is $4.25 ($\frac{Total\ variable\ cost}{Total\ quantity\ of\ units\ purchased} = \frac{\$233.75}{55} = \$4.25$).

The total cost per unit we can find from formula:

$$(Total\ fixed\ costs\ +\ Total\ variable\ costs)\ /\ Total\ units\ produced$$

We have to find total variable cost:

$$Total\ variable\ cost = variable\ cost\ of\ per\ orchids\ +$$

$$+variable\ cost\ of\ per\ bags\ of\ potting\ soil + variable\ cost\ of\ per\ ceramic\ pots$$

$$Total\ variable\ cost = \$233.75 + (3 \times \$2.75) + (55 \times \$4.60) = \$233.75 + \$8.25 + \$253 = \$495$$

$$Total\ variable\ cost = \$495$$

$$Total\ cost\ per\ potted\ plant = \frac{Total\ variable\ costs}{Total\ units\ produced} = \frac{\$495}{55} = \$9$$