Capsule A: Drawing a Step Supply Function

The **Supply Function** tells us the total amount of a good that suppliers would want to sell at each possible price.

For this example we will use the information on the distribution of production costs in Table 1 to construct the Supply Table (Table 2) and then to draw the Supply Curve (Figure 1).

Table 1: Distribution of Production Costs

Types	Units	Cost per unit
Low-Cost	20	5€
High-Cost	10	25€

In the example, 20 units can be produced at a low-cost of 5€, and 10 units at a high-cost of 25€. (This is the same as if there were 20 suppliers with Seller Cost of 5€ who can produce at most one unit of the good, and 30 suppliers with Seller Cost of 25€ who can also produce at most one unit.) At any price below 5€ a unit nobody would want to supply any units because anyone producing would lose money, so the total number of units supplied to the market would be zero. We therefore enter 0 as the amount supplied in the first line of Table 2.

Table 2: Supply Table

Price Range	Amount Demanded
$P<$5€	0
5€$<P<$25€	20
$P>$25€	30

If the price, P, is between 5€ and 25€, suppliers producing the 20 low-cost units can make money by selling their units, since their costs are only 5€. But the high-cost suppliers would lose money if they sold for any price that is below 25€. Therefore at prices between 5€ and 25€, all low-cost suppliers but none of the high-cost suppliers will want to sell their units. The total quantity supplied at prices between 5€ and 25€ will be exactly 20 units, and so we enter 20 as the amount supplied in the second line of the Table 2.

At prices above 25€, all of the high-cost suppliers *and* all of the low-cost suppliers can make money

by selling. Since 10 units can be produced at high-cost and 20 at low-cost, the total amount supplied at prices above 25€ is 30 units. Therefore we enter 30 as the amount supplied in the last line of the Supply Table.

The first step to draw the supply curve is to draw a pair of axes, with *price* measured on the vertical axis and *quantity* measured on the horizontal axis. (Refer to Figure 1.)

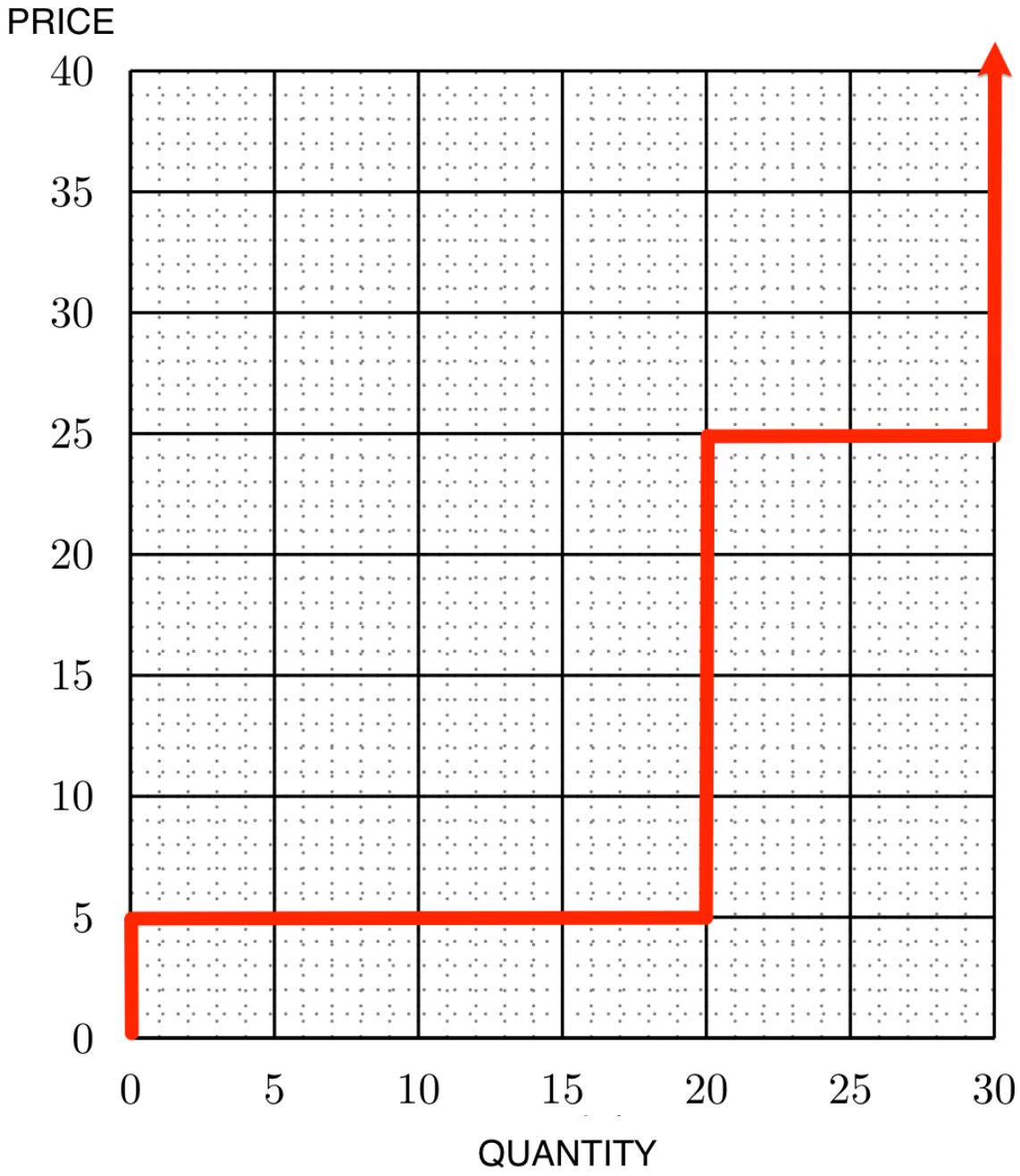

Figure 1: Supply Curve

As we see from the Supply Table (Table 2), at prices below 5€, the amount of apples supplied is 0. Thus the supply curve must show that at these prices no apples will be supplied. This means that

the supply curve includes a vertical line that follows the vertical axis from the origin $(0, 0)$ up to the point $(0, 5)$ where price is 5€ and quantity is 0.

From the Supply Table, we see that at any price between 5€ and 25€, the total quantity supplied is 20 units. Therefore the supply curve includes a vertical line segment drawn from the point $(20, 5)$ up to the point $(20, 25)$.

At prices above 25€, we see from the Supply Table that the quantity supplied is 30 units. Therefore the supply curve includes a vertical line starting at the point $(30, 25)$ and going straight up to the top of the box.

At a price of 5€, by producing a high-cost unit a supplier would lose money, while suppliers producing low-cost units won't *make* any money, but they won't *lose* any money either. They will be *indifferent* between selling and not selling and hence we cannot know whether none, some or all of the 20 low-cost units will be produced. We show this fact by adding a horizontal segment at a price of 5€ on our supply curve showing that at a 5€ price we can have any number of units from 0 to 20. On the graph, this segment is a line from the point $(0, 5)$ to the point $(20, 5)$.

At a price of 25€, all suppliers of the 20 low-cost units will want to produce, while suppliers of the 10 high-cost units would just break even. So at a price of 25€, the total quantity supplied can be any amount between 20 and 30 units. This implies that the supply curve includes a horizontal segment at a price of 25€. This segment runs from the point $(20, 25)$ to the point $(30, 25)$.

If you think that the height of a supplier as representing her seller cost, the supply curve merely lines up supplier from the shortest to the tallest.