The College Board: Connecting Students to College Success

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Question 1

12 points \((4 + 4 + 1 + 3)\)

(a) 4 points:
- One point is earned for a correctly labeled market graph of the dairy industry.
- One point is earned for correctly labeled equilibrium industry price and quantity.
- One point is earned for drawing a horizontal demand curve for Bestmilk at the market price.
- One point is earned for showing the equilibrium quantity for Bestmilk where price equals marginal cost and the minimum of average total cost \((P=MC=ATC)\).

(b) 4 points:
- One point is earned for showing a decrease in market demand.
- One point is earned for showing a decrease in equilibrium market price and quantity.
- One point is earned for showing the change to a new lower profit-maximizing price and quantity for Bestmilk.
- One point is earned for shading the area of loss for Bestmilk.

(c) 1 point:
- One point is earned for stating that \(P \geq AVC\), or \(TR \geq TVC\), or \(P>AVC\), or \(TR>TVC\), or losses are less than total fixed cost.

(d) 3 points:
- One point is earned for stating that industry price returns to the original long-run equilibrium price.
- One point is earned for stating that the output of a typical firm returns to the original profit-maximizing quantity.
- One point is earned for stating that there is a decrease in the number of firms.
9 points \((3 + 2 + 4)\)

(a) 3 points:
- One point is earned for identifying \(P=\$12\) and \(Q=100\) units.
- One point is earned for identifying the consumer surplus before the tax, \(A+B+C+F\).
- One point is earned for identifying the producer surplus before the tax, \(D+E+G\) or \(\$100\).

(b) 2 points:
- One point is earned for stating that the price paid by the buyers does not rise by the full amount of the tax.
- One point is earned for a correct explanation: \(P\) increases by \$1 and the tax is \$2 per unit; or a correct elasticity explanation, such as \(S\) is not perfectly elastic, or \(D\) is not perfectly inelastic, or \(D\) and \(S\) have the same elasticities.

(c) 4 points:
- One point is earned for identifying the net price received by the sellers, \$11.
- One point is earned for identifying the tax revenue, \(B+C+D\) or \$160.
- One point is earned for identifying consumer surplus, \(A\).
- One point is earned for identifying the deadweight loss, \(F+G\) or \$20.
Question 3

**8 points** (2 + 2 + 2 + 2)

(a) 2 points:
- One point is earned for indicating perfect competition.
- One point is earned for a correct explanation: The price is constant, or the firm is a price taker in the product market.

(b) 2 points:
- One point is earned for indicating perfect competition.
- One point is earned for a correct explanation: The wage rate is constant, or the firm is a price taker in the labor market.

(c) 2 points:
- One point is earned for stating that MRP is $400.
- One point is earned for showing the calculation: MRP = P x MP, so MRP = 20 x $20 = $400

(d) 2 points:
- One point is earned for indicating six workers, or in between six and seven workers.
- One point is earned for a correct explanation: MRP>W for the sixth worker, but MRP<W for the seventh worker.