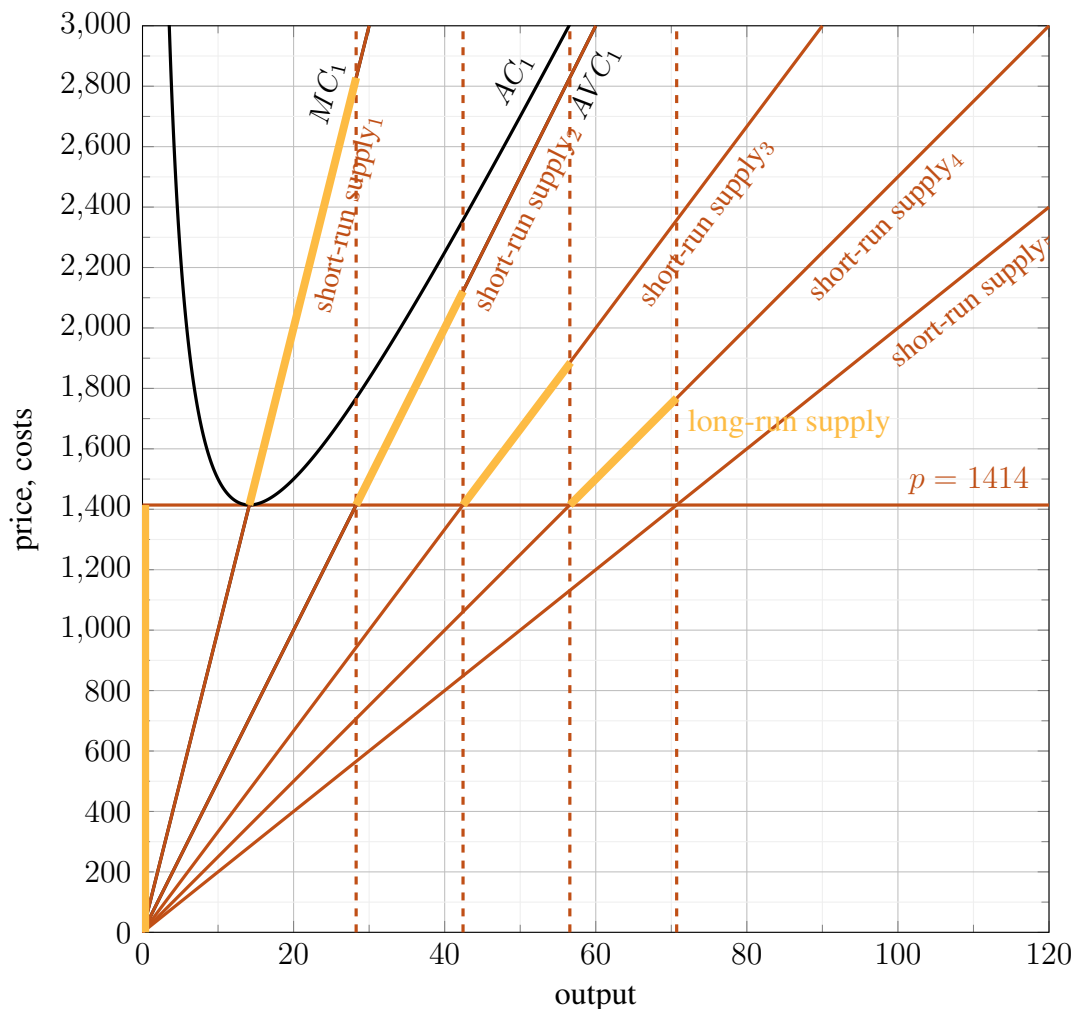


Quiz 13 - SOLUTION

- Last week we looked at a firm whose cost function is given by $c(y) = 50y^2 + 10000$. Remember that
 - its average cost function is $AC(y) = 50y + \frac{10000}{y}$,
 - its average variable cost function is $AVC(y) = 50y$, and
 - its marginal cost function is $MC(y) = 100y$.
- Write the mathematical formula for the firm's short-run supply curve. $y_1(p) = \frac{p}{100}$
- Imagine that there are n identical firms with the above characteristics operating in the industry.
 - Write the mathematical formula for the industry's aggregate supply function. $y_n(p) = \frac{np}{100}$
 - In the graph below (which shows the cost curves for a single firm), plot the aggregate supply function for $n = 1, n = 2, n = 3$ and $n = 4$.



- Compute the price at which firms earn zero profits. $p^* = 1000\sqrt{2} \approx 1414$
- Represent the zero-profit price in the graph above (with a horizontal line).
- In the graph above, illustrate the industry's long-run supply curve by eliminating portions of the individual supply curves that can never be intersections with a downward-sloping market demand curve in the long run.