# Check your understanding

35. You run a factory which makes smartphones. There are various variables you can adjust (how many workers to hire, etc.). When you optimize these variables to minimize cost subject to the constraint that you want to produce 1000 smartphones, you find that the minimum cost is \$100,000, and the Lagrange multiplier is $\lambda = 40$. Now suppose you invest an additional \$1000, and produce as many smartphones as possible. About how many additional smartphones can you manufacture?

    (a) 4.
    (b) 10.
    (c) 25.
    (d) 40.
    (e) 40,000.

    Answer: (c).

    Explanation: The meaning of the Lagrange multiplier is that it costs about \$40 to make each additional smartphone.