

As $MC=dC/dq$ then $dC=MCdq$ meaning we will be producing each unit with a new cost (that depends on quantity produced). So we will have to take an integral of cost function. As quantity changed from 25 to 50 we have respective margins.

$$\Delta C = \int_{25}^{50} (4q + 4) dq = 2q^2 \Big|_{25}^{50} + 4q \Big|_{25}^{50} = 5000 - 1250 + 200 - 100 = 3850$$