

- The total cost of manufacturing a set of golf clubs is given by

$$C(x) = 800 - 10x + 0.20x^2,$$

where x is the number of sets of golf clubs produced. How many sets of golf clubs should be manufactured to incur minimum cost and what is that minimum cost?

THE GRAPH OF THE COST FUNCTION, $C(x)$, IS A PARABOLA THAT OPENS UPWARD. THE MINIMUM VALUE OF C OCCURS AT THE GRAPH'S VERTEX.

$$x = \frac{-b}{2a} = \frac{10}{2(0.20)} = \frac{10}{0.4} = 25$$

$$C(25) = 675.00$$

VERTEX AT $(25, 675)$

⇒

MIN COST IS \$675

WHEN $x = 25$