

2.

## Solution

Quadratic function: is a function that can be written in the form:

$h(s) = as^2 + bs + c$  where  $a$ ,  $b$ , and  $c$  are real numbers and  $a \neq 0$

we have  $h(s) = 2s^2 - 15s - 7$ , note:  $2s^2 - 15s - 7$  is in  $sh$ -plane

Here, we know that  $a=2$ ,  $b=-15$ ,  $c=-7$

Since  $a>0$ , we know that the  $h$ -coordinate of the vertex is a minimum. However, to find the  $h$ -coordinate of our vertex we first need to find the  $s$ -coordinate of the vertex by using  $s = -\frac{b}{2a} = -\frac{-15}{2 \cdot 2} = \frac{15}{4}$  Now that we have the  $s$ -coordinate, we can find the  $h$ -coordinate

of the vertex by finding  $h(\frac{15}{4}) = 2(\frac{15}{4})^2 - 15(\frac{15}{4}) - 7 = \frac{225}{8} - \frac{225}{4} - 7 = -\frac{281}{8}$  Minimum  $= -\frac{281}{8}$