

1.

## Solution

To find the vertex, we look at the coefficients in the function  $s(d) = ad^2 + bd + c$  in this equation,  $a = 1$  and  $b = 6$

The first coordinate of the vertex has the formula:  $\frac{-b}{2a}$  now, plugging into formula to get:

$$\frac{-b}{2a} = -\frac{6}{2(1)} = -3$$

The second coordinate of the vertex is  $s(-3) = 1(-3)^2 + 6(-3) - 5$   
 $= -14$

Therefore, the vertex of the graph of  $f$  is  $(-3, -14)$