

1.

## Solution

To find the  $q$ -intercept, we set  $v$  equal to 0, so :

$$v(q) = q^2 + 2q - 3 = (-1 + q)(3 + q) = 0$$

$$-1 + q = 0 \text{ or } 3 + q = 0$$

$$q = 1 \text{ or } q = -3$$

So, the  $q$ -intercepts are at the points  $(1, 0)$  and  $(-3, 0)$