3.

Solution

To find the j-intercept, we set r equal to 0, so :

$r(j) = j^2 - 2j - 8 = (-4 + j)(2 + j) = 0$

$2 + j = 0$ or $-4 + j = 0$

$j = -2$ or $j = 4$

So, the j-intercepts are at the points $(-2,0)$ and $(4,0)$