

1. $d^3 + 3d^2 - d - 3$ has a factor $(d - (-3))$ compute all other factors:

$$(d - 3)^2 (d - 1)$$

$$(d - 3) (d - 2) (d - 1)$$

$$(d - 1) (d + 1) (d + 3)$$

$$(d - 3) (d - 1) (d + 4)$$

Solution

Apply Long Division.

$$(d - 1) (d + 1) (d + 3)$$