

Exercise 11

For the following exercises, find the x - or t -intercepts of the polynomial functions.

$$C(t) = 4t^4 + 12t^3 - 40t^2$$

Solution

To find the t -intercepts, set $C(t) = 0$ and solve the equation for t .

$$4t^2(t^2 + 3t - 10) = 0$$

$$4t^2(t + 5)(t - 2) = 0$$

$$t^2 = 0 \quad \text{or} \quad t + 5 = 0 \quad \text{or} \quad t - 2 = 0$$

$$t = 0 \quad \text{or} \quad t = -5 \quad \text{or} \quad t = 2$$

Therefore, the t -intercepts are $(-5, 0)$ and $(0, 0)$ and $(2, 0)$.

