

## Exercise 10

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

$$C(t) = 2t^4 - 8t^3 + 6t^2$$

### Solution

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

$$2t^4 - 8t^3 + 6t^2 = 0$$

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

$$2t^2(t - 3)(t - 1) = 0$$

$$t^2 = 0 \quad \text{or} \quad t - 3 = 0 \quad \text{or} \quad t - 1 = 0$$

$$t = 0 \quad \text{or} \quad t = 3 \quad \text{or} \quad t = 1$$

Therefore, the  $t$ -intercepts are  $(0, 0)$  and  $(1, 0)$  and  $(3, 0)$ .

