

Mitropole, 2017, Exercice 3 partie a):

1) 1000 €

2) a. 2000 €

b. $C(6) = 15 \times 6^3 - 120 \times 6^2 + 350 \times 6 + 1000 = 2020 \text{ €}$.

3) 9 km

Partie B:

1) $R(x) = 530 \times x = 530x$.

2) $B(x) = R(x) - C(x)$

$$B(x) = 530x - (15x^3 - 120x^2 + 350x + 1000)$$

$$B(x) = 530x - 15x^3 + 120x^2 - 350x - 1000$$

$$B(x) = -15x^3 + 120x^2 + 180x - 1000$$

3) $B(x) = -15x^3 + 120x^2 + 180x - 1000$.

$$B'(x) = -15 \times 3x^2 + 120 \times 2x + 180 - 0$$

$$B'(x) = -45x^2 + 240x + 180$$

$$(x-6)(-45x-30) = -45x^2 - 30x + 270x + 180 = -45x^2 + 240x + 180 = B'(x)$$

4) $(x-6)(-45x-30) = 0$

$$x-6=0 \quad \text{ou} \quad -45x-30=0$$