

PR.

$$C(x) = x^3 - 2x^2 - 10x + 320$$

$$C(x) = \underbrace{(x^3 - 2x^2 - 10x)}_{V(x)} + \underbrace{320}_K$$

$$C(x) = V(x) + K$$

x POČET KUSOV (q)

$x^2 - 2x - 10$ CENA 1 KUSU (p)

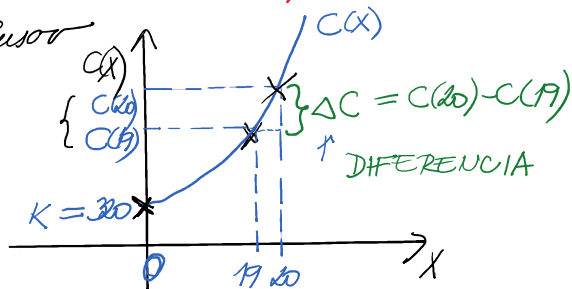
$$V(x) = q \cdot p$$

1) CELKOVÉ NÁKLADY NA 20 kusov

$$C(20) = 20^3 - 2 \cdot 20^2 - 10 \cdot 20 + 320 = 7320$$

2) NÁKLADY NA 20. VÝROBOK

$$C(20) - C(19) = 1253$$



$$AC(x) = \frac{C(x)}{x}$$

3) PRIEMERNÉ NÁKLADY NA 1 KUS

$$AC(20) = \frac{C(20)}{20} = \frac{7320}{20} = 366$$

$$AC(30) = \frac{C(30)}{30} = 8496\%$$

BOD ZLOMU

PR $C(x) = 0,1x^2 + 35x + 15000$

$$p = 385 - 0,9x \quad (\text{CENA ZA 1 KUS})$$

$$q = x \quad (\text{POČET KUSOV})$$

$$R(x) = ?$$

$$R(x) = C(x)$$

$$R(x) > C(x)$$

$$R(x) = p \cdot q = (385 - 0,9x) \cdot x$$

$$R(x) = C(x)$$

$$(385 - 0,9x)x = 0,1x^2 + 35x + 15000$$

$$385x - 0,9x^2 = 0,1x^2 + 35x + 15000 \quad / +0,9x^2 - 385x$$

$$x^2 - 350x + 15000 = 0$$

$$D = b^2 - 4ac \quad x_{1,2} = \frac{-b \pm \sqrt{D}}{2a}$$

ALEBO VIETOVÉ VZŤAHY
 $(x-50)(x-300) = 0$ $x_1 = 50$
 $x_2 = 300$

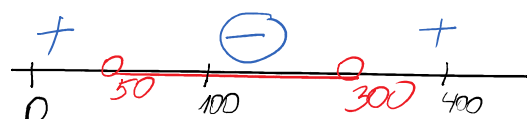
$$R(x) > C(x)$$

$$385x - 0,9x^2 > 0,1x^2 + 35x + 15000$$

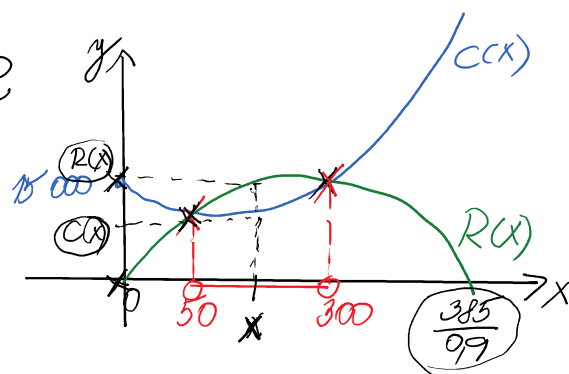
$$x^2 - 350x + 15000 < 0$$

$$(x-50)(x-300) < 0$$

METODA NULOVÝCH BODŮV



VÝROBA JE ZISKOVÁ PRO XE (50, 300)



$$385 - 0,9x = 0$$

$$x = \frac{385}{0,9}$$

EQUILIBRIUM - ROVNOVÁŽNÝ STAV

PR $D: q = 249 - 2p - p^2 = D(p)$

$S: q = 33 + 4p + p^2 = S(p)$

$$D(p) = S(p) \checkmark$$

$$249 - 2p - p^2 = 33 + 4p + p^2$$

$$2p^2 + 6p - 216 = 0 \quad | \cdot \frac{1}{2}$$

$$p^2 + 3p - 108 = 0$$

$$(p+12)(p-9) = 0$$

$$p_1 = -12 < 0 \quad \phi \quad X$$

$$p_2 = 9 = p_E$$

ROVNOVÁŽNÁ CENA JE 9 EUR

$$(q_E = D(9) = S(9) = 150)$$

$$S: p^2 + 4p + 33 =$$

$$= (p+2)^2 - 2^2 + 33 =$$

$$= (p+2)^2 + 29$$

$$V = [-2, 29]$$

$$D: 249 - 2p - p^2 =$$

$$= -[p^2 + 2p - 249] =$$

$$= -[(p+1)^2 - 1^2 - 249] =$$

$$= -[(p+1)^2 - 250]$$

$$= 250 - (p+1)^2$$

$$V = [-1, 250]$$

$$(a+b)^2 = a^2 + 2ab + b^2$$

