

Var (a)

$$x \geq 50$$

Var (b)

$z \in \{0, 1\}$; 1 if production of iced biscuit is started

$$y \leq Mz$$

$$y \geq 150z$$

M must be chosen to avoid introducing a restrictive constraint

For example $M=960$

best choice $M = \min(960, \frac{18 \cdot 12}{0.3})$

Q (3)

The existing limits to production

are on eggs and butter, therefore

they are limits on the overall quantity of biscuits.

Chocdat biscuits are more rentable, therefore

the optimal solution will be produce only choc. biscuits and in the maximal qt allowed by the limits of butter and eggs.

$$x=0$$

$$y = \min(960, \frac{6}{0.3} \cdot 12) = 720$$

x ————— x

5)

Var (a)

$$x=50$$

$$y = 720 - 50 = 670$$

As basic biscuits are less rentable, we will produce the min. number asked by the additional constraint.

Var (b)

no changes

we already produce more than 150 biscuits (15 packets)

General

Var (a) If production contains already 50 packets no change in the solution