

## Question #7752, Economics / Economics of Enterprise | Completed

### Question

A small firm traps rabbits for their fur and feet. Each rabbit yields one pelt and two feet (only the hind feet are suitable for the "lucky rabbit's feet"). The demand for pelts is:

$$PP = 2.00 - 0.001QP$$

and the demand for rabbit's feet is given by:

$$PF = 1.60 - 0.001QF$$

The marginal cost of trapping and processing each rabbit is \$0.60.

- a. What are the profit-maximizing prices and quantities of pelts and rabbit's feet
- b. the quantities of pelts and rabbits feet

### Answer

a. Marginal cost of 1 pelt is equal to \$0.60 (1 rabbit – 1 pelt), marginal cost of 2 feet is equal to \$0.60 (1 rabbit – 2 feet), so marginal cost of 1 foot is equal to \$0.30.

Condition is about small firm, so this case is for perfect competitive market.

Profit-maximization condition for perfect competition is:  $P=MC$ , so profit-maximizing prices are

$$\mathbf{PP=\$0.60, PF=\$0.3}$$

b. Profit-maximizing quantities:

1b. Pelt: from demand equation  $QP=(2.00-PP)/0.001=1.4/0.001 \Rightarrow \mathbf{QP=1400}$

2b. Feet: from demand equation  $QF=(1.60-PF)/0.001=1.3/0.001 \Rightarrow \mathbf{QF=1300}$