

USAEBO Sample Problems - Round 1

USA Economics and Business Olympiad (USAEBO)

1. A perfectly competitive firm in Boston is currently producing at a quantity where its marginal cost (MC) is \$10, its average total cost (ATC) is \$12, and the market price (P) is \$10. To maximize its profit (or minimize its loss) in the short run, the firm should:
 - A. Continue producing the same quantity because $P = MC$.
 - B. Increase production to lower the average total cost.
 - C. Decrease production to reduce marginal costs.
 - D. Increase the price of its product to \$12 to cover the average total cost.
 - E. Shut down immediately because it is making an economic loss.

2. A U.S. consumer spends their entire monthly budget on only two goods: Coffee (X) and Tea (Y). Their utility function is given by $U(X, Y) = \min\{2X, Y\}$. The price of Coffee is $P_x = \$4$ and the price of Tea is $P_y = \$2$. If the consumer's disposable income is \$120, what is the optimal consumption bundle (X, Y)?
 - A. (10, 40)
 - B. (15, 30)
 - C. (20, 20)
 - D. (30, 0)
 - E. (12, 24)

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3. The Fed operates under an inflation-control target. Suppose it follows a Taylor Rule to set the target overnight rate (i):

$$i = 0.02 + \pi + 0.5(\pi - 0.02)$$

where π is the current inflation rate. If the Consumer Price Index (CPI) indicates an inflation rate of 4% (0.04) and the real interest rate (r) is defined by the Fisher Equation ($r = i - \pi$), what is the current real interest rate in the U.S.?

- A. 1%
 - B. 2%
 - C. 3%
 - D. 4%
 - E. 5%
4. A Chicago-based entrepreneur is evaluating a business expansion that requires an immediate upfront capital outlay of \$10,000. The project is expected to generate a net cash flow of \$6,000 at the end of Year 1 and \$6,000 at the end of Year 2. If the appropriate annual discount rate (opportunity cost of capital) is 10%, what is the Net Present Value (NPV) of this investment?
- A. $NPV \approx -\$413$
 - B. $NPV \approx \$413$
 - C. $NPV \approx \$909$
 - D. $NPV \approx \$1,240$
 - E. $NPV \approx \$2,000$