

1. (30 points) Assume today's settlement price on a CME EUR futures contract is \$1.30/€. The contract is written on €125,000 and you have a **short** position in one contract. The initial performance bond is \$6,500, and the maintenance performance bond is \$4,000.

A. On day 1, the settlement price became \$1.29/€, what is your performance bond account balance at end of day 1?

$$(1.30 - 1.29) \times 125,000 + 6500 = \boxed{7750 \text{ USD}}$$

B. On day 3, the settlement price became \$1.32/€, you decide to close your position. What is your **total** gain or loss?

$$(1.30 - 1.32) \times 125,000 = \boxed{2500 \text{ USD}}$$

2. (70 points) From the perspective of the **writer** of a put option written on €62,500. If the exercise price is \$1.55/€, and the option premium is \$0.03.

A. At what exchange rate do you start to lose money (i.e. break-even exchange rate)?

$$1.55 - .03 = \boxed{1.52}$$

B. What is your maximum profit?

$$.03 \times 62,500 = \boxed{1875}$$

C. What is your maximum loss?

$$(1.55 - .03) \times 62,500 = 1.52 \times 62,500 = \boxed{95,000}$$

D. If the spot exchange rate is \$1.54/€ calculate the intrinsic value and the time value of the put option.

$$\text{Intrinsic Value} = \text{Strike} - S_0 = 1.55 - 1.54 = \boxed{.01}$$

$$\text{Time Value} = \text{Premium} - \text{Intrinsic} = .03 - .01 = \boxed{.02}$$

E. Draw your profit graph for this put option (Put writer Profit Graph)

