**Q12** What is the economic value today of each of the following payment streams if money can earn 7.5%.

1. $1000, $3000, and $2000 due in one, three, and five months, respectively.

P1 = \_\_\_\_$1000\_\_\_\_\_ = \_$1000\_ $ 993.79

1 + 0.075(1÷12) 1.00625

P2 = \_\_\_\_$3000\_\_\_\_\_ = \_$3000\_ $2944.79

1 + 0.075(3÷12) 1.01875

P3 = \_\_\_\_$2000\_\_\_\_\_ = \_$2000\_ $1939.39

1 + 0.075(5÷12) 1.03125

Today’s economic value **$5877.97**

1. Two $3000 payments due two and four months from now.

P1 = \_\_\_\_$3000\_\_\_\_\_ = \_$3000 $2962.96

1 + 0.075(2÷12) 1.0125

P2 = \_\_\_\_$3000\_\_\_\_\_ = $3000\_ $2926.83

1 + 0.075(4÷12) 1.025

Today’s economic value **$5889.79**

**Q14** Ninety days ago Stella signed an agreement with Manon requiring her to make three payments of $400 plus interest 90, 150, and 210 days, respectively, from the date of the agreement. Each payment was to include interest on the $400 principal at the rate of 13.5% from the date of the agreement. Stella now wants Manon to renegotiate the agreement and accept a single payment 30 days from now, instead of the three scheduled payments. What payment should Manon require in the new agreement if money is worth 8.5%?

**First streams of payments:** P = $400, r = 13.5%, t1 = 90 days, t2 = 150 days & t3 = 210 days

S1 = $400[1 + 0.135(90÷365)] = $413.32

S2 = $400[1 + 0.135(150÷365)] = $422.19

S3 = $400[1 + 0.135(210÷365)] = $431.07

**Second streams of payments:** Time 0 (90 days past original agreement date)

P1 = $413.32, t1 = 30 days r = 8.5%

S1 = $413.32[1 + 0.085(30÷365)] = $ 416.21

S2 = $422.19, t2 = 30 days (60-30), r = 8.5%

S2 = \_\_\_$422.19\_\_\_\_\_\_ = \_$422.19 = $ 419.26

1 + 0.085(30÷365) 1.006986

S3 = $431.07, t3 = 90 days (120-30)

S3 = \_\_\_$431.07\_\_\_\_\_\_ = \_$431.07 = $ 422.22

1 + 0.085(90÷365) 1.020959

Total Single Payment in 30 days **$1257.69**