Wood Manufacturing & Finishing
More Simple Interest & Compound Interest

Phase 6

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Question 1

- **Q1.** A Cabinet- Maker looking to Invest €8,000 for 4 years has been given **two options** . Which Option should they choose in order to make the most money? **Show all Calculations.**

- Option A will give 6% Compound Interest for the first 2 years and then 4% Simple Interest for the following 2 years.
- **Or**

- Option B will give 4% Compound Interest for the first 2 years and then 6% Simple Interest for the following 2 years.

Question 1

- Option A : €8,000 @ 6% C.I. for 2yrs then 4% S.I. for 2yrs
- Invest 8,000.00
  +6% C.I. 480.00
  Yr1 8480.00
- +6% C.I. 508.80
  Yr2 8988.90
- +4% S.I. 359.55
  Yr3 9348.45
- +4% S.I. 359.55
  Yr4 €9,708.00

- Option B : €8,000 @ 4% C.I. for 2yrs then 6% S.I. for 2yrs
- Invest 8,000.00
  +4% C.I. 320.00
  Yr1 8320.00
- +4% C.I. 332.80
  Yr2 8652.80
- +6% S.I. 519.16
  Yr3 9171.96
- +6% S.I. 519.16
  Yr4 €9,691.12

- Answer is Option A

Question 2

- Q 2. A Person looking to Invest €6,000 for 4 years has been given two options.
- Which Option should they choose in order to make the most money? **Show all Calculations.**
- Option A will give 3% Compound Interest for the first 2 years and then 5% Simple Interest for the following 2 years.

Or

- Option B will give 5% Compound Interest for the first 2 years and then 3% Simple Interest for the following 2 years.

Question 2

- Option A : €6,000 @ 3% C.I. for 2yrs then 5% S.I. for 2yrs
- First 2 years 3 % C.I. : Year 1: $6000 \times 1.03 = 6180$
  Year 2: $6180 \times 1.03 = 6365.40$
- S.I. for 2 years at 5%: I = PRT $6365.40 \times 0.05 \times 2 = 636.54$
- Final Amount = 6365.40 + 636.54 = **€7,000.94**

- Option B : €6,000 @ 5% C.I. for 2yrs then 3% S.I. for 2yrs
- First 2 years 5% C.I. : Year 1: $6000 \times 1.05 = 6300$
  Year 2: $6300 \times 1.05 = 6615$
- S.I. for 2 years at 3%: I = PRT $6615 \times 0.03 \times 2 = 369.90$
- Final Amount = 6615+ 369.90= **€7011.90**
- Answer: Option B gives more money **€7011.90**

Question 3

€9,500 was invested at Compound Interest for 3 years. The first year rate was 6%. The second year rate was 4%. The third year rate was 5%.

Calculate the final amount and the interest earned.

- Year 1: 9500 × 1.06 = 10070
- Year 2: 10070 × 1.04 = 10472.80
- Year 3: 10472.80 × 1.05 = 10996.44
- Final Amount = **€10,996.44**
- Interest Earned = 10996.44 − 9500 = **€1,496.44**

Question 4

€18,000 was invested at Compound Interest for 3 years. The first year rate was 3%. The second year rate was 6%. The third year rate was 4%.

Calculate the final amount and the interest earned.

- Year 1: $18000 \times 1.03 = 18540$
- Year 2: $18540 \times 1.06 = 19652.40$
- Year 3: $19652.40 \times 1.04 = 20438.50$
- Final Amount = **€20,438.50**
- Interest Earned = $10996.44 - 9500$ = **€2,438.50**

Question 5

€20,000 was invested for 4 years. The first two years was at compound interest rate of 4%. The third and fourth year was at a simple interest rate of 5%.

Calculate the final amount and the interest earned.

- First 2 years 4 % C.I. : Year 1: 20,000 × 1.04 = 20800
  Year 2: 20800 × 1.04 = 21632
- S.I. for 2 years at 5%: I = PRT 21632 × 0.05 × 2 = 2163.2
- Final Amount = 21632 + 2163.2 = **€23,795.2**
- Final Amount = **€23,795.2**
- Interest Earned = **23795.2** − 20000 = **€3,795.20**

Question 6

€14,000 was invested for 4 years. The first two years was at compound interest rate of 5%. The third and fourth year was at a simple interest rate of 3%.

Calculate the final amount and the interest earned.

- First 2 years 5% C.I. : Year 1: 14,000 × 1.05 = 14700
  Year 2: 14700 × 1.05 = 15435
- S.I. for 2 years at 5%: I = PRT 15435 × 0.03 × 2 = 926.10
- Final Amount = 15435 + 926.10 = **€16,361.10**
- Final Amount = **€16,361.10**
- Interest Earned = **16,361.10** − 14000 = **€2,361.10**

Question 7

€11,000 was invested at Compound Interest for 3 years. The first year rate was 2%. The second year rate was 5%. The third year rate was 4%.

Calculate the final amount and the interest earned.

- Year 1: 11000 × 1.03 = 11220
- Year 2: 11220 × 1.06 = 11781
- Year 3: 11781 × 1.04 = 12252.24
- Final Amount = **€12,252.24**
- Interest Earned = 12252.24 − 1,100 = **€ 1,252.24**

Question 8

- Q 2. A Person looking to Invest €6,000 for 4 years has been given two options.
- Which Option should they choose in order to make the most money? **Show all Calculations.**
- Option A will give 3% Compound Interest for the first 2 years and then 5% Simple Interest for the following 2 years.

Or

- Option B will give 5% Compound Interest for the first 2 years and then 3% Simple Interest for the following 2 years.

Question 8

- Option A: €28,000 @ 4% C.I. for 2yrs then 3% S.I. for 2yrs
- First 2 years 4 % C.I. : Year 1: $28000 \times 1.04 = 29120$
  Year 2: $29120 \times 1.04 = 30284.80$
- S.I. for 2 years at 3%: I = PRT $30284.80 \times 0.03 \times 2 = 1817.09$
- Final Amount = $30284.80 + 1817.09 =$ **€32,101.88**
- Option B: €28,000 @ 8% C.I. for 2yrs then 2% S.I. for 2yrs
- First 2 years 8% C.I. : Year 1: $28000 \times 1.08 = 30240$
  Year 2: $30240 \times 1.08 = 32659.20$
- S.I. for 2 years at 2%: I = PRT $32659.20 \times 0.03 \times 2 = 1306.37$
- Final Amount = $32659.20 + 1306.37 =$ **€33965.56**
- Answer: Option B gives more money **€33965.56**

Question 9

€17,500 was invested for 4 years. The first two years was at compound interest rate of 5.5%. The third and fourth year was at a simple interest rate of 6%.

Calculate the final amount and the interest earned.

- First 2 years 5.5% C.I. : Year 1: 17,500 × 1.05.5 = 18462.50
  Year 2: 18462.50× 1.05.5 = 19477.94
- S.I. for 2 years at 6%: I = PRT 19477.94 × 0.06 × 2 = 2337.35
- Final Amount = 19477.94 + 2337.35 = **€21815.29**
- Final Amount = **€21815.29**
- Interest Earned = 21815.29 − 14000 = **€4315.29**

Question 10

€8,750 was invested at Compound Interest for 3 years. The first year rate was 4%. The second year rate was 4.5%. The third year rate was 5%.

Calculate the final amount and the interest earned.

- Year 1: 8750 × 1.04 = 9100
- Year 2: 9100 × 1.045 = 9509.50
- Year 3: 9509.50 × 1.06 = 10,080.07
- Final Amount = **€10,080.07**
- Interest Earned = 10,080.07 − 9500 = **€1,330.07**

Question 11

€16,000 was invested for 4 years. The first two years was at compound interest rate of 6%. The third and fourth year was at a simple interest rate of 4%.

Calculate the final amount and the interest earned.

- First 2 years 6% C.I. : Year 1: 17,500 × 1.06 = 18462.50
  Year 2: 18462.50× 1.05.5 = 19477.94
- S.I. for 2 years at 4%: I = PRT 19477.94 × 0.04 × 2 = 2337.35
- Final Amount = 19477.94 + 2337.35 = **€21815.29**
- Final Amount = **€21815.29**
- Interest Earned = 21815.29 − 14000 = **€4315.29**

Question 12

- Q 2. A Person looking to Invest €20,000 for 5 years has been given two options.
- Which Option should they choose in order to make the most money? **Show all Calculations.**
- Option A will give 5% Compound Interest for the first 3 years and then 5% Simple Interest for the following 2 years.

Or

- Option B will give 4% Compound Interest for the first 2 years and then 6% Simple Interest for the following 3 years.

Question 12

- **Option A:** €20,000 @ 5% C.I. for 3yrs then 5% S.I. for 2yrs
- First 3 years 5% C.I. : Year 1: 20000 × 1.05 = 21000
  Year 2: 21000 × 1.05 = 22050
  Year 2: 22050 × 1.05 = 23152.50
- S.I. for 2 years at 5%: I = PRT 23152.50 × 0.05 × 2 = 2315.25
- Final Amount = 23152.50 + 2315.25 = **€25467.75**
- **Option B:** €20,000 @ 4% C.I. for 2yrs then 6% S.I. for 3yrs
- First 2 years 4% C.I. : Year 1: 20000 × 1.04 = 20800
  Year 2: 20800 × 1.04 = 21632
- S.I. for 2 years at 2%: I = PRT 21632 × 0.06 × 3 = 3,893.76
- Final Amount = 21632 + 3,893.76 = **€25,525.76**
- Answer: Option B gives more money **€25,525.76**