

Section/Lesson Title: Compound InterestMaterials: WSHW# 53 WS

Reflections:

I. Compound Interest

Year	AMT AT BEGINNING OF YEAR	AMT AT END OF YEAR
1	P	$P(1+r)$
2	$P(1+r)$	$(P(1+r))(1+r) = P(1+r)^2$
3	$P(1+r)^2$	$(P(1+r)^2)(1+r) = P(1+r)^3$
4	$P(1+r)^3$	$P(1+r)^4$
5		etc

$$A = P(1+r)^n \quad \text{AT THE END OF } n \text{ YEARS}$$

IF YOU CALCULATE AMOUNT YEARLY

- ① 6% INTEREST COMPOUNDED YEARLY: \$1000 3 YEARS

$$A = 1000(1+0.06)^3 = \boxed{\$1191.02}$$

- ② \$1500 9% COMPOUNDED MONTHLY FOR 1 YEAR

$$A = 1500 \left(1 + \frac{0.09}{12}\right)^{12} = \boxed{\$1640.71}$$

↑  
PERIODIC INTEREST RATE

- ③ \$1500 9% COMPOUNDED MONTHLY FOR 25 YEARS

$$A = 1500 \left(1 + \frac{0.09}{12}\right)^{12(25)} = 1500(1.0075)^{300} = \boxed{\$14,112.6}$$

↑  
TOTAL # OF COMPOUNDINGS

Compound Interest Formula:

$$A = P(1+r)^n$$

A = FINAL AMOUNT

P = INITIAL PRINCIPAL

r = PERIODIC INTEREST RATE

n = TOTAL TIMES COMPOUNDED

