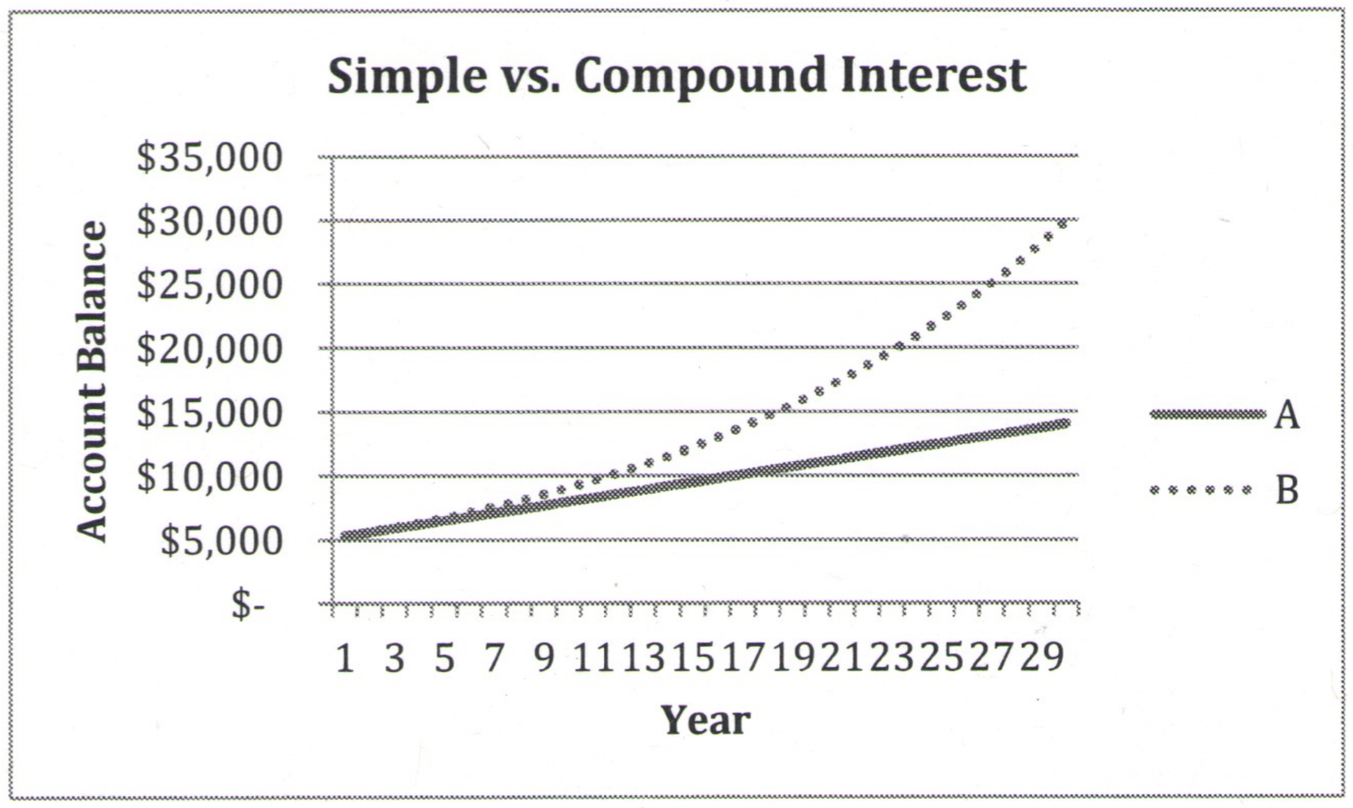
MTH 105 **Warmup: 2.1-2.4 Review** Key

Write the letter of the graph that matches the type of interest.

1. Simple Interest A (Linear growth)

2. Compound Interest B (Exponential growth)



3. Write the letters in order from the type of compounding that would give the lowest amount to the type that would give the highest amount (assuming the same interest rate).

E, A, D, C, B

A. Quarterly 4 B. Continuously ∞ C. Daily 365 D. Monthly 12 E. Annually 1

Write the letter of the formula that you would use to solve the problem. Then write the spreadsheet calculation and compute the answer.

Financial Formulas

A. =principal + principal*rate*years

B. =FV(rate, nper, pmt, [pv], [type])

C. =PV(rate, nper, pmt, [fv], [type])

D. =principal*exp(rate*years)

E. =EFFECT(nominal rate, periods per year)

F. = PMT(rate, nper, pv, [fv], [type])

B 4. You deposit $10,000 into an account that earns 5% interest, compounded quarterly. How much will you have in 20 years?

=FV(.05/4, 20*4, 0, 10000)
= $27,014.85

A 5. You loan a friend $1,000 for 2 years at 3% simple interest. How much will they pay you back? A = P+Prt = 1000+1000(.03)(2)
= $1,060

F 6. You are buying a house and taking out a loan of $250,000. The interest rate is 5% and it is a conventional 30-year mortgage. How much will your monthly payment be?

= PMT(.05/12, 30*12, 250000, 0)
= $1,342.05

E 7. You want to compare an account that earns 5.4% interest compounded daily with an account that earns 6.2% compounded quarterly. Find each effective rate.

= EFFECT(.054, 365)
= .05548 ≈ 5.5%

= EFFECT(.062, 4)
= .06346 ≈ 6.3%

D 8. You deposit $7,000 into an account that earns 8% interest compounded continuously. How much will you have in 10 years?

= 7000 * EXP(.08*10)
= $15,578.79