

Peter Regan teaching MBA Math at Tuck

MBA Math Sample Exercise

Finance: Time Value of Money with Annual Compounding

Moving well beyond generic GMAT aptitude questions, the MBA Math sample exercises allow prospective MBA students to self assess their proficiency with the quantitative building blocks of the MBA first year curriculum.

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Exercise

A zero-coupon bond is a security that pays no interest, and is therefore bought at a substantial discount from its face value. If interest rates are 8% how much would you pay today for a zero coupon bond with a face value of \$2,300 that matures in 7 years?

Solution

Solution Commentary

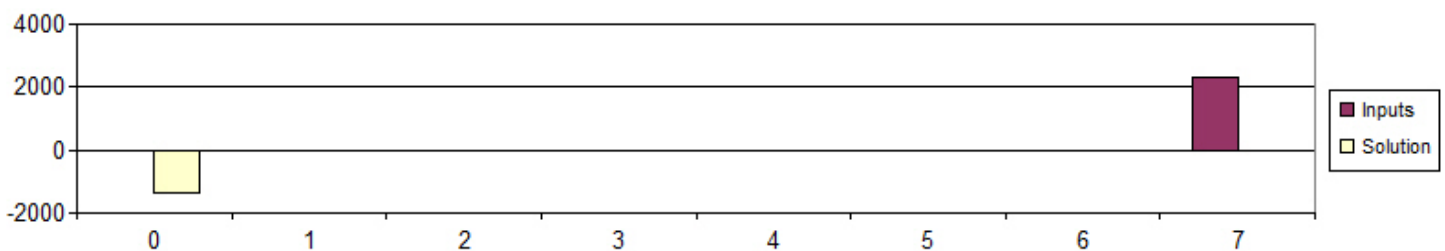


(4:30)

Variable Assignments

Present Value PV = ?
Rate $r = 0.08$
Years $n = 7$
Future Value FV = 2,300

Cash Flow



By convention for charting, Present Values are depicted as negative, reflecting an initial investment outflow in return for future cash inflows.

	A	B	C	D	E	F	G	H	I
1	Year	0	1	2	3	4	5	6	7
2	Inputs	0	0	0	0	0	0	0	2300
3	Solution	-1342.028	0	0	0	0	0	0	0

Sheet1

Manual Solution

$$PV = FV/(1+r)^n$$

$$PV = 2300/1.08^7$$

$$PV = 1,342.03$$

Excel Solution

	A	B	C	D	E
1	PV	\$1,342.03	\$1,342.03		
2	Annual Rate	8.0%			
3	# Years	7			
4	FV	\$2,300.00			
5					
6					
7					

Sheet1

Financial Calculator Solution

2,300	[FV]
0	[PMT]
8	[i]
7	[n]
HIT [PV] TO SOLVE...	-1342.03

Peter Regan teaches decision science courses at Dartmouth's Tuck School and Duke's Fuqua School. He also teaches pre-term quantitative skills courses at Tuck and Cornell's Johnson School. He created the MBA Math self-paced, online pre-MBA quantitative skills course covering finance, accounting, economics, statistics, and spreadsheets.