



Corporate Finance

Residential

Note that these are cut and pastes of material on the DVD. I have provided this document to cut down on the time needed to search for the questions that I would like to cover in the webinar.

Disclaimer:

These questions are designed to provide the student with a general review of areas covered on the CMA Entrance Examination. While the topic coverage is consistent with that on the Entrance Examination, the number of stems (there are five on the entrance exam); the length of question (entrance exam questions tend to be longer requiring more time to read); the types of distracters (the entrance examination tends to use distracters such as none of the above, all of the above and both x and y to a larger degree than other examinations); and the direction of the calculation (the entrance examination will often have you work back to front, middle to either front to back and so on).

Use of the Material

These questions will be covered in depth in the review session. The pace will be quick (frantic?) so students are advised to at least have read them (and at best have worked through them under exam conditions).

CB 10

- (a) A firm contemplates the purchase of a \$10,000 machine that would save labor costs of \$5,000 in each of years 1 and 2, and \$6,000 in each of years 3 and 4. The machine is not expected to have a salvage value at the end of the fourth year, and capital cost allowances on a declining balance may be claimed at a rate of 30 percent. If the company's tax rate is 40 percent and its cost of capital is 8 percent, calculate:
- (1) The net cash flows that the investment would generate during the first 4 years;
 - (2) The net present value of this proposal; and
 - (3) The internal rate of return.
- (b) Calculate the net present value of the proposal in part (a) if a salvage value of \$1,000 is expected at the end of the 4-year life of the machine.
- (c) Assume that, in order to stimulate investment, the government allows a fast write-off on the machine, with linear depreciation taken over 2 years. What is the net present value of the investment if the machine is expected to have no salvage value?

CB 11

A firm currently operates a machine that was purchased 5 years ago at a cost of \$150,000. If currently sold, its market value would be \$100,000. The machine is expected to last another 5 years, by which time it will have no salvage value. A new and improved version of the machine could replace the old one and is now on the market at a cost of \$130,000. Its expected economic life is 5 years. Operating costs for the old machine, which is more labor intensive, are \$15,000 per year, whereas the new machine would only require operating costs of \$9,000 per year. Both machines belong to the same asset class, and capital cost allowances can be taken at a rate of 30 percent on the declining balance. The corporate tax rate is 40 percent, and the cost of capital is 10 percent.

- (a) The net present value of this investment opportunity is (\$7,761.40) assuming no salvage value for the new machine, and a NPV of +\$931 assuming a salvage value of \$20,000 for the new machine. Provide proof for these numbers.
- (b) How high would the salvage value of the new machine have to be in order for it just to become attractive?

CB 12

Capital Budgeting Review Question

The Arid Burger Company (ABC) operates several snack food centers at the Edmonton International Airport. On January 1, 2004, ABC purchased a meat processing machine that it uses to process buffalo meat into burgers. The machine has been in use for three years. ABC is considering the purchase of a new, more efficient machine. If purchased, the new machine would be acquired on January 2, 2007. ABC expects to sell 300,000 buffalo burgers in each of the next four years. The selling price of each burger is expected to be \$3.50.

ABC has two options. First it can continue to operate the old machine. Second it can sell the old machine and purchase the new machine. The following information has been assembled to help management decide which option is more desirable. ABC has several other buffalo burger forming machines in Class 8 (20% db) which are used at other airports across Canada.

	Old Machine	New machine
Original cost of machine at acquisition	\$ 80,000	\$120,000
Useful life at date of acquisition	7 years	4 years
Expected annual cash operating costs		
Variable per burger	\$ 3.20	\$3.14
Total fixed	\$ 15,000	\$ 14,000
Estimated residual values of machines		
January 2, 2007	\$ 40,000	\$ 120,000
December 31, 2010	\$ 7,000	\$ 20,000

ABC has a 40% income tax rate. Assume that all operating revenues and costs occur at the end of the year. ABC has a weighted average costs of capital of 16%

Required:

1. Using the net present value method, determine whether ABC should retain the old machine or purchase the new machine.
2. What non qualitative factors should ABC take into consideration prior to purchasing this machine.

