The answer to the question is highlighted in red. Explanations are highlighted in green.

12. A firm is evaluating a new machine to replace an existing, older machine. The old (existing) machine is being depreciated at $20,000 per year, whereas the new machine’s depreciation will be $18,000. The firm’s marginal tax rate is 30 percent. Everything else equal, if the new machine is purchased, what effect will the change in depreciation have on the firm’s incremental operating cash flows?

a. There should be no effect on the firm’s cash flows, because depreciation is a non-cash expense.

b. Operating cash flows will increase by $2,000.

c. Operating cash flows will increase by $1,400.

d. Operating cash flows will decrease by $600.

e. None of the above is correct.

If the new machine is purchased, the change in (marginal) depreciation will be -$2,000 = $18,000 - $20,000, which represents a decrease of $2,000 in an operating expense (depreciation). Because operating expenses decrease by $2,000, the firm will have a $2,000 increase in taxable income (everything else equal), which means taxes will increase by $600 = $2,000(0.3). Although depreciation is a non-cash expense, taxes must be paid in cash. As a result, the firm’s operating cash flows will decrease by the amount of the additional taxes—that is, $600.

RETURN TO THE SAMPLE QUESTIONS