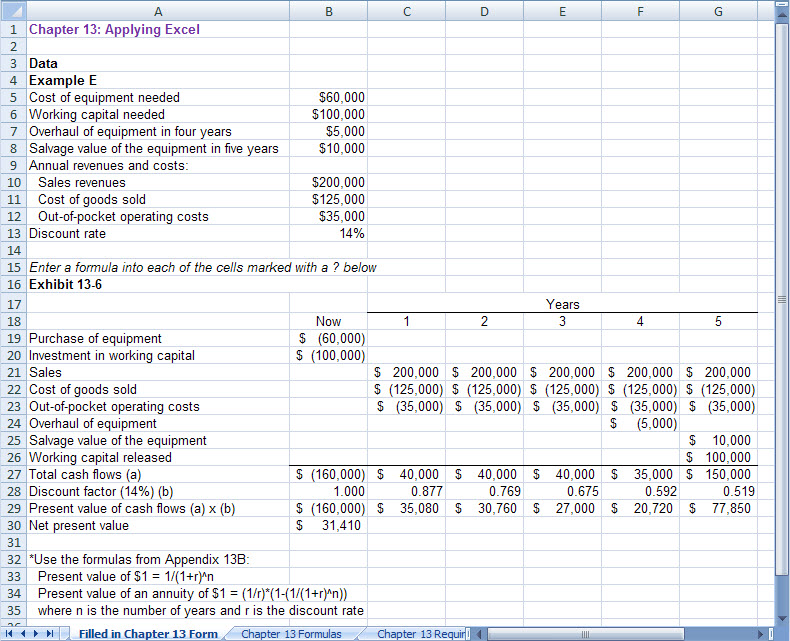
Chapter 13: Applying Excel

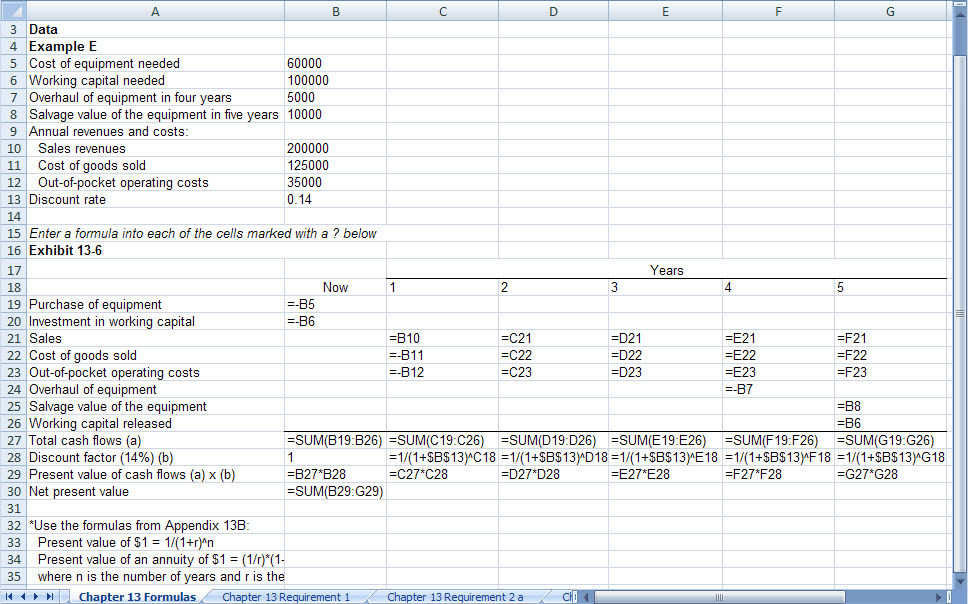
The completed worksheet is shown below.

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Note: Your worksheet may differ from the above in rows 29 and 30. The worksheet above has been set to use the rounded-off discount factors rather than more exact factors without rounding. For example, the factor 0.519 is rounded off from 0.519368664… If the more exact factor is used to calculate the present value of the $150,000 total cash flow at the end of year 5, the answer is $77,905 rather than $77,850. These rounding errors cumulate so that the more exact net present value is $31,493 rather than the $31,410 as displayed. Either answer is okay.

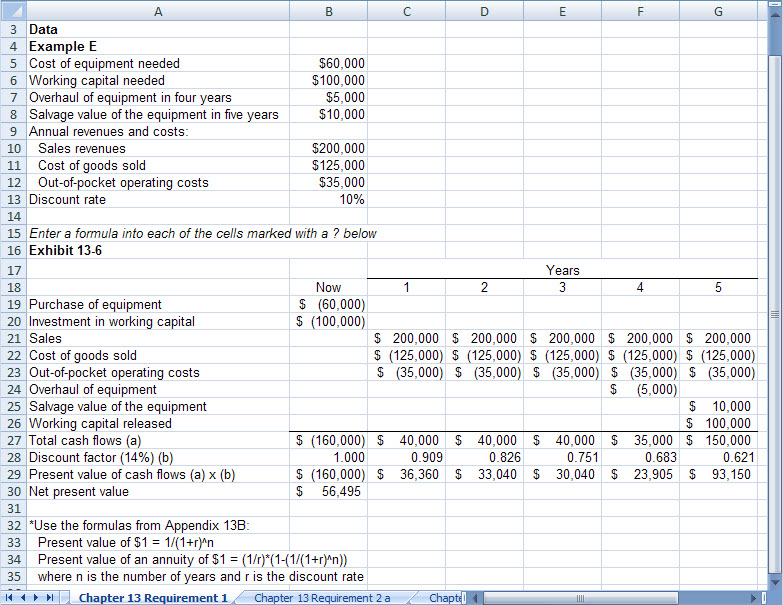
Chapter 13: Applying Excel (continued)

The completed worksheet, with formulas displayed, is shown below.

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Chapter 13: Applying Excel (continued)

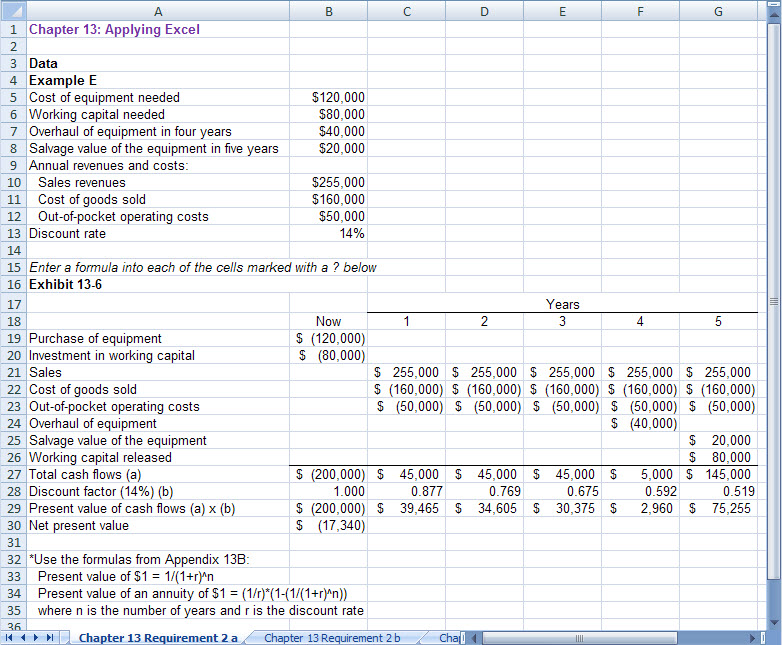
1. With the change in the discount rate, the result is:

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The net present value increases because the positive cash inflows occur in the future. When the discount rate decreases, the future cash flows have a larger present value.

Chapter 13: Applying Excel (continued)

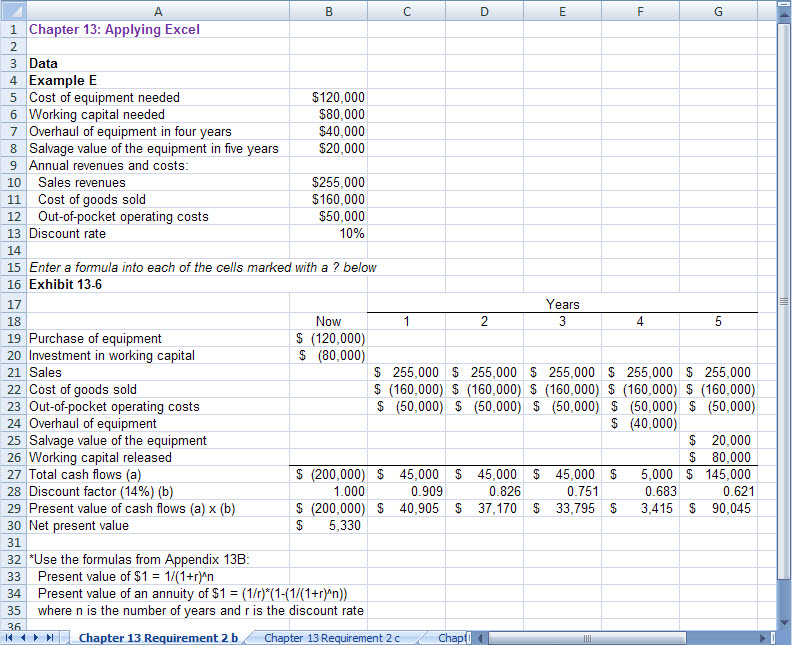
2. For the new project, the worksheet should look like this:

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Chapter 13: Applying Excel (continued)

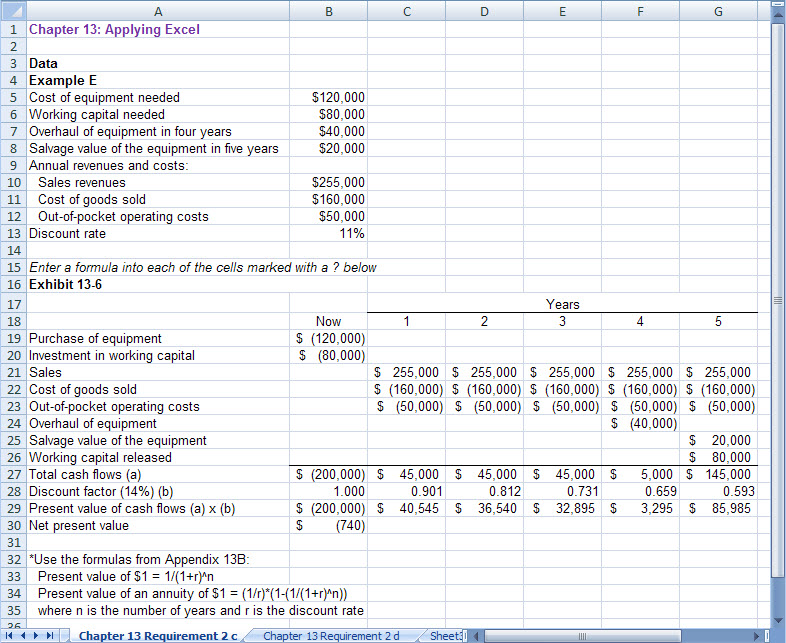
a. The net present value of the project is $(17,340). Again, your answer may differ due to the precision of the calculations.

b. Increasing the discount rate results in making the negative net present value even more negative. Decreasing the discount rate improves the net present value. It turns positive when decreasing the discount rate from 11% to 10% as shown below.

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Chapter 13: Applying Excel (continued)

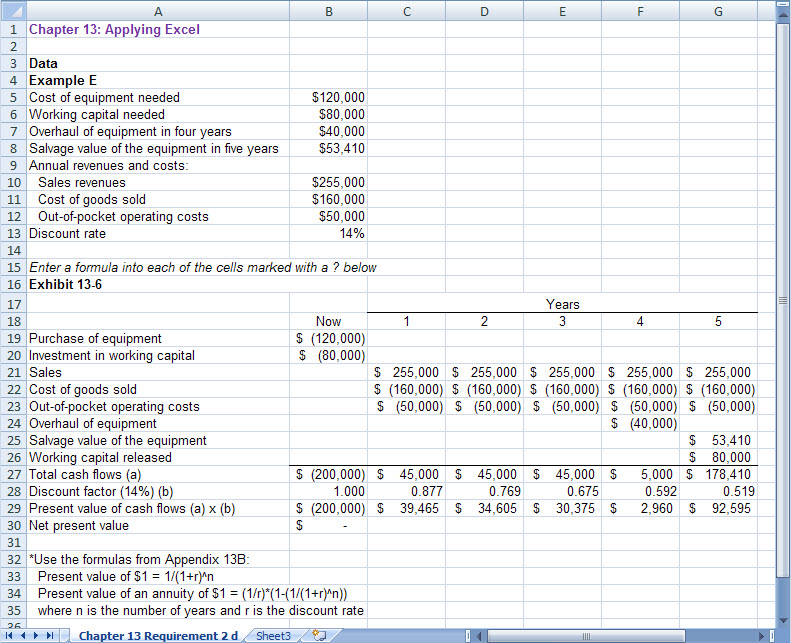
c. The internal rate of return is the discount rate at which the net present value is zero. This occurs somewhere between the discount rates 10% and 11%. The net present value at 10% is $5,330 as shown above. The net present value at 11% is $(740) as shown below. Therefore, the internal rate of return is between 10% and 11%.

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Chapter 13: Applying Excel (continued)

d. The amount of future uncertain salvage value that would be required to make the net present value positive, which is $53,410 ($33,410 + $20,000), can be found by experimenting with the salvage value in the worksheet. It can also be computed using the formula from the text as follows:



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