Richard evaluated a capital budgeting project—a new machine that is needed to manufacture inventory—using his firm’s required rate of return and found that the project’s net present value (NPV) is negative. Based on this information, which of the following must be correct?

a. The project’s internal rate of return is also negative.

b. The project’s discounted payback period is greater than its economic life.

c. As long as its initial investment outlay is fairly low, the firm should purchase the new machine if it is used to replace an older machine that is required to produce inventory.

d. The project’s traditional payback period must be greater than the maximum payback period that the firm has established.

e. None of the above is correct.

If a project has a negative NPV, then it is not an acceptable investment. If a project is not acceptable using one time value of money capital budgeting technique, then it is not acceptable using the other time value of money techniques. As a result, this project’s IRR must be less than the firm’s required rate of return (r), and its discounted payback must be greater than its economic life.