P2–3 Income statement preparation On December 31, 2006, Cathy Chen, a self-employed certified public accountant (CPA), completed her first full year in

business. During the year, she billed $360,000 for her accounting services. She

had two employees: a bookkeeper and a clerical assistant. In addition to her

monthly salary of $8,000, Ms. Chen paid annual salaries of $48,000 and

$36,000 to the bookkeeper and the clerical assistant, respectively. Employment

taxes and benefit costs for Ms. Chen and her employees totaled $34,600 for the

year. Expenses for office supplies, including postage, totaled $10,400 for the

year. In addition, Ms. Chen spent $17,000 during the year on tax-deductible

travel and entertainment associated with client visits and new business development.

Lease payments for the office space rented (a tax-deductible expense)

were $2,700 per month. Depreciation expense on the office furniture and

fixtures was $15,600 for the year. During the year, Ms. Chen paid interest of

$15,000 on the $120,000 borrowed to start the business. She paid an average

tax rate of 30 percent during 2006.

a. Prepare an income statement for Cathy Chen, CPA, for the year ended

December 31, 2006.

b. Evaluate her 2006 financial performance.

P5–5 Risk and probability Micro-Pub, Inc., is considering the purchase of one of two microfilm cameras, R and S. Both should provide benefits over a 10-year period, and each requires an initial investment of $4,000. Management has constructed the table (at the top of the facing page) of estimates of rates of return and probabilities for pessimistic, most likely, and optimistic results.

a. Determine the range for the rate of return for each of the two cameras.

b. Determine the expected value of return for each camera.

c. Purchase of which camera is riskier? Why?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Camera R | Camera R | Camera S | Camera S |
|  | Amount | Probability | Amount | Probability |
| Initial Investment | $4000 | 1.00 | $4000 | 1.00 |
| Annual rate of return |  |  |  |  |
| Pessimistic | 20% | .25 | 15% | .20 |
| Most likely | 25% | .50 | 25% | .55 |
| Optimistic | 30% | .25 | 35% | .25 |

P7–5 Stock quotation Assume that the following quote for the Advanced Business

Machines stock (traded on the NYSE) was found in the Thursday, December 14,

issue of the Wall Street Journal.

+3.2 84.13 51.25 AdvBusMach ABM 1.32 1.6 23 12432 81.75 +1.63

Given this information, answer the following questions:

a. On what day did the trading activity occur?

b. At what price did the stock sell at the end of the day on Wednesday,

December 13?

c. What percentage change has occurred in the stock’s closing price since the

beginning of the calendar year?

d. What is the firm’s price/earnings ratio? What does it indicate?

e. What is the last price at which the stock traded on the day quoted?

f. How large a dividend is expected in the current year?

g. What are the highest and the lowest price at which the stock traded during

the latest 52-week period?

h. How many shares of stock were traded on the day quoted?

i. How much, if any, of a change in stock price took place between the day

quoted and the day before? At what price did the stock close on the day before?

P10–3 Breakeven cash inflows and risk Pueblo Enterprises is considering investing

in either of two mutually exclusive projects, X and Y. Project X requires an initial investment of $30,000; project Y requires $40,000. Each project’s cash inflows are 5-year annuities: Project X’s inflows are $10,000 per year; project Y’s are $15,000. The firm has unlimited funds and, in the absence of risk differences, accepts the project with the highest NPV. The cost of capital is 15%.

a. Find the NPV for each project. Are the projects acceptable?

b. Find the breakeven cash inflow for each project.

c. The firm has estimated the probabilities of achieving various ranges of cash

inflows for the two projects, as shown in the following table. What is the

probability that each project will achieve the breakeven cash inflow found

in part b?

 Probability of achieving cash inflow in given range

|  |  |  |
| --- | --- | --- |
| Range of cash inflow | Project X | Project Y |
| $0 to $5000 | 0% | 5% |
| $5000 to $7500 | 10 | 10 |
| $7500 to $10000 | 60 | 15 |
| $10000 to $12500 | 25 | 25 |
| $12500 to $15000 | 5 | 20 |
| $15000 to $20000 | 0 | 15 |
| Above $20000 | 0 | 10 |

d. Which project is more risky? Which project has the potentially higher NPV?

Discuss the risk–return tradeoffs of the two projects.

e. If the firm wished to minimize losses (that is, NPV\_$0), which project

would you recommend? Which would you recommend if the goal was

achieving a higher NPV?

P10–5 Sensitivity analysis James Secretarial Services is considering the purchase of

one of two new personal computers, P and Q. Both are expected to provide benefits over a 10-year period, and each has a required investment of $3,000. The firm uses a 10% cost of capital. Management has constructed the following table of estimates of annual cash inflows for pessimistic, most likely, and optimistic results.

|  |  |  |
| --- | --- | --- |
|  | Computer P | Computer Q |
| Initial investment (CFo) | $3000 | $3000 |
| Outcome | Annual cash inflows (CF) | Annual cash inflows (CF) |
| Pessimistic | $500 | $400 |
| Most likely | 750 | 750 |
| Optimistic | 1000 | 1200 |

a. Determine the range of annual cash inflows for each of the two computers.

b. Construct a table similar to this for the NPVs associated with each outcome

for both computers.

c. Find the range of NPVs, and subjectively compare the risks associated with

purchasing these computers.