

Chapter 22

True-false:

The following statements are either true or false. Place a (T) in the parentheses before each true statement and an (F) before each false statement.

1. (F) Controllable costs and expenses are always the same as direct costs and expenses.
2. (F) Costs incurred by service departments in support of selling departments are direct expenses of the selling departments. *Always allocated to operating Depts*
3. (T) Depending on the circumstances, employees' wages can be either a direct or an indirect expense.
4. (F) A department's contribution to overhead is the excess of its revenues over its direct expenses.
5. (F) Joint costs must be allocated among products when preparing internal managerial accounting reports.
6. (T) A direct expense should not be allocated among more than one department.
7. (T) Accounting information can be used to evaluate (a) managers who are responsible for controlling costs and expenses and (b) each department's profitability or cost effectiveness. *"Responsibility acct"*
8. (T) An advertising department is both a service department and a cost center. *yes yes*
9. (F) The maintenance department is an example of a profit center. *cost center*
10. (F) It is the responsibility of the manager of an investment center to use the resources of the center to generate profits for the firm. *yes and also to manage assets*

Multiple-choice:

You are given several words, phrases or numbers to choose from in completing each of the following statements or in answering the following questions. In each case, select the one that best completes the statement or answers the question and place its letter in the answer space provided.

- A 1. A supervisor works some of the time in Department A (which has 10 employees) and the rest of the time in Department B (which has 6 employees). In square feet of area, Department A is only half the size of Department B. If the supervisor's primary task is managing people, how and in what amounts would the supervisor's \$24,000 annual salary be most logically allocated between Departments A and B?

*10 10/16
6 6/16
16*

 - a. Based on the number of employees in each department, \$15,000 to Department A and \$9,000 to Department B. *24000 * 62.5% = 15000*
 - b. Based on a combined statistic of square footage and number of employees in each department, \$10,909 to Department A and \$13,091 to Department B. *37.5% = 9000*
 - c. Based on the number of departments supervised, \$12,000 to Department A and \$12,000 to Department B
 - d. Based on the square footage in each department, \$8,000 to Department A and \$16,000 to Department B.
 - e. Based on the number of employees in each department, \$9,000 to Department A and \$15,000 to Department B.

- D 2. Which of the following would be considered a quality and customer satisfaction measure of performance?

 - a. ROI. *no*
 - b. Number of defective parts per million. *yes*
 - c. Percentage of orders delivered on time. *yes*
 - d. Both c and d. *(b & c)*

Non quantitative

C

3.

Investment turnover measures:

- a. The income earned per dollar of sales.
- b. The income earned per dollar of plant assets.
- c. How efficiently the company generates sales from its invested assets.
- d. All of the above.

$$\frac{\text{Sales}}{\text{Avg Inv Assets}}$$

Short problem

Alex Inc. reported the following data:

Income from operations	\$13,000
Sales revenue	65,000
Invested assets	50,000

Required: Calculate the following. Place your answers below this problem.

- 1. Profit margin 20%
- 2. Investment turnover 130%
- 3. ROI 26%
- 4. Residual income, assuming a desired minimum rate of return of 10%. 8000

$$\textcircled{1} \text{ PM} = \frac{\text{NI}}{\text{Sales}} = \frac{\$13,000}{\$65,000} = 20\%$$

$$\textcircled{2} \text{ Inv Turnover} = \frac{\text{Sales}}{\text{Avg Inv Assets}} = \frac{\$65,000}{50,000} = 1.3 \text{ or } 130\%$$

$$\textcircled{3} \text{ ROI} = \frac{13,000}{50,000} \frac{\text{NI}}{\text{Inv Assets}} \quad \text{OR} \quad \textcircled{1} \text{ PM} \times \textcircled{2} \text{ Inv} = \text{Turn} = 26\% \leftarrow 20\% \times 1.3 = 26\%$$

④ Residual NI:

Actual NI = 13,000

Target NI

$$(50,000 \times 10\%) = 5,000$$

$$\text{Residual NI} = \underline{8,000}$$

$$\begin{array}{r} 26\% \text{ ROI} \\ \text{OR} - 10\% \text{ Target} \\ \hline 16\% \text{ Residual} \\ \times 50,000 \text{ Inv Asset} \\ \hline = 8,000 \end{array}$$

CHAPTER 23

True-false:

The following statements are either true or false. Place a (T) in the parentheses before each true statement and an (F) before each false statement.

1. (F) When a company considers accepting an order for additional units that will not reduce its normal sales activity, the order should be accepted only if the revenue from the sale exceeds the average cost of producing the product.
2. (F) A company should always purchase components of its product if the purchase price is less than the incremental costs of making those components. *Consider qualitative factors.*
3. (T) Assets' historical costs are sunk costs and are irrelevant to decisions about what to do with those assets in the future.
4. (T) If a company decides to make a component instead of buying it, an opportunity cost is incurred equal to the net value of the products that could have been produced with the capacity committed to making the component. — *Definition of opp costs.*
5. (T) In selecting a sales mix, management needs to have good measures of the company's production and market constraints and the contribution margins generated by its products.
6. (T) When a department's elimination is being considered, its revenues should be compared with its avoidable expenses.
7. (F) Management should always rely only on historical costs when determining whether to accept or reject a new order. *Relevant costs*
8. (F) When making decisions concerning scrap or rework, management should recognize that costs already incurred are entirely irrelevant. *yes - sunk*

Multiple Choice:

You are given several words, phrases, or numbers to choose from in completing each of the following statements or in answering the following questions. In each case select the one that best completes the statement or answers the question and place its letter in the answer space provided.

- D 1. Pied Company is considering buying a component which they currently produce. Current cost information is shown below:

Direct materials	\$1 per unit
Direct labor	\$2 per unit
Factory overhead	50% of direct labor

Incremental overhead for this component is 25% of direct labor costs. *2 x .25 = .50 FOH* Pied can purchase this component for \$3.95 per unit. What is the relevant cost per unit and should Pied continue to make this component?

- a. \$4.00; yes.
- b. \$3.50; no.
- c. \$4.00; no.
- d. \$3.50 yes.

Relevant Cost:

DM	1	
DL	2	
Inc. OH	.50	(2 x 25%)
	3.50	

TO BUY

3.95

Make (saves .45)

A

2. Concordia Corporation operates a process that can produce 40 bells per hour or 60 whistles per hour. The annual capacity of the process is 2,400 hours. The market demand is 50,000 bells per year and 90,000 whistles per year. Use the following additional information to find the most profitable sales mix for the company:

	Bells	Whistles
Selling price per unit.....	\$1.20	\$1.00
Variable costs per unit.....	0.70	0.60
Contribution margin per unit..	\$0.50	\$0.40

Max out Bells

2400 hrs

$\frac{1}{40} = .025$ mh per bell

= 96,000 bells

(limited to 50,000)

50,000 Bells

MH to produce Bells $50,000 \times .025 = 1250$ Hrs on Bells

Max on Bells

$2400 - 1250 = 1150$ left for whistles

1150 Bells

- | | Bells | Whistles |
|----------------------|---------|----------|
| a. 50,000 | 69,000 | |
| b. 96,000 | (none) | |
| c. (none) | 144,000 | |
| d. 36,000 | 90,000 | |
| e. None of the above | | |

$2400 \text{ MH} \times 40 = 96,000$

3. Schroeder Department Store has clothing, housewares, and cosmetics departments. Net income (or loss) for the departments is \$13,000, \$(1,000) loss, and \$10,000, respectively. Operating expenses for the housewares department are \$15,000, of which 40% are unavoidable. Should Schroeder automatically eliminate the housewares department? Why or why not?

- Yes, because it incurred a net loss of \$1,000.
- Yes, because the store would save \$9,000 of avoidable expenses.
- Yes, because its unavoidable expenses of \$6,000 are less than its avoidable expenses of \$9,000.
- No, because its revenues of \$14,000 are greater than its unavoidable expenses of \$6,000.
- No, because its revenues of \$14,000 are greater than its avoidable expenses of \$9,000.

	Clothing	HW	Cosmetics
NI	13000	(1000)	10,000

P. 1025
avoidable
exp.

OP EXP: Unavoidable
Avoidable

6000 (40%)
9000

TOTAL

15000

Get rid of it

Rev < Avoid exp

NO Rev given

SHORT PROBLEM

A company is considering whether to accept additional business. They are operating at 85% of full capacity. At this level, per unit and annual costs are as follows:

	Unit Cost	Annual Costs
Sales	\$5.00	\$425,000
Costs:		
Direct materials	\$1.25	106,250
Direct labor	1.75	148,750
Factory overhead	.50	42,500
Other expenses	.50	42,500
Total costs	4.00	\$340,000
Operating Income	1.00	85,000

$2500 \div 10,000 = .25$ Incremental OH
 $2000 \div 10,000 = .20$ Other...

A current buyer has offered to purchase an additional 10,000 units for \$3.50 per unit. The following information is relevant to assist management in making the decision concerning whether to sell these additional units at less than the current cost of \$4.00 per unit:

Manufacturing the additional units requires the normal direct materials and direct labor costs.

Total incremental overhead costs are \$2,500. Total incremental other expenses are \$2,000.

1. Determine the relevant costs per unit to make the 10,000 additional units:

$DM\ 1.25 + DL\ 1.75 + \text{Incremental OH } .25 + \text{Other } .20 = 3.45$

2. Determine the total operating income related to the 10,000 additional units:

Sales	10,000 x 3.50	35,000
Costs:		
Direct materials	1.25	12,500
Direct labor	1.75	17,500
Factory overhead		2,500
Other expenses		2,000
Total costs		34,500
Operating Income		500

3. Should the company accept the offer to make 10,000 additional units at \$3.50 each and why?

Yes .. additional income of \$500. Should also consider other non-financial measures

CHAPTER 24

True False:

The following statements are either true or false. Place a (T) in the parentheses before each true statement and an (F) before each false statement.

1. Capital budgeting decisions involve uncertain outcomes and long-term commitments. Therefore, management does not need to carefully analyze the factors affecting these decisions.
2. Management's estimate of an investment's payback period is significantly affected by predicted future net cash flows.
3. In general, an investment with a longer payback period is preferred over an investment with a shorter payback period. *shorter is better*
4. When comparing asset purchase proposals, an opportunity with a higher expected rate of return on average investment is always preferred over an opportunity with a lower expected rate of return.
5. When average investment returns are used to select between capital investments, the one with the least risk, the shortest payback period, and the highest return for the longest time is often identified as the best.
6. An analysis of alternative capital investments based on net present values is not affected by the asset's salvage values and management's choice of tax depreciation methods. *it is affected by salvage value*
7. When performing a net present value analysis, management compares the asset's cost with the sum of the unadjusted predicted future cash flows from the asset. *bad question*
8. The net present value of a project can be significantly affected by the pattern of the cash flows to be received over the project's life. *yes*

Multiple Choice:

You are given several words, phrases, or numbers to choose from in completing each of the following statements or in answering the following questions. In each case select the one that best completes the statement or answers the question and place its letter in the answer space provided.

- D 1. Hansen Company is considering buying a machine for \$24,000. It has a predicted salvage value of \$4,000. Annual depreciation over its five-year life will be \$4,000 each year. The company expects sales of the machine's product to generate an after-tax annual net income of \$4,200. The cash flows are expected to be received evenly throughout each year. The machine's accounting rate of return is:
- a. \$12,000.
 b. \$14,000.
 c. 1.4286%.
 d. 30%.
 e. 35%.

$$\frac{\text{Avg GAAP NI}}{\text{Avg Cost}} = \frac{4200}{(24000 + 4000) / 2}$$

A

2. The Motoroma Company is considering making an investment that will have an initial cost of \$240,000 and that is expected to generate the following cash flows:

Year 1	\$120,000
Year 2	140,000
Year 3	40,000

Management wants to earn no less than 12% on this investment. What is its net present value?

- a. \$7,228.
- b. \$60,000.
- c. \$126,212.
- d. \$247,228.
- e. \$300,000.

$$\begin{array}{r}
 1 \quad 120,000 \times .8929 = 107,148 \\
 2 \quad 140,000 \times .7972 = 111,608 \\
 3 \quad 40,000 \times .7118 = 28,472 \\
 \hline
 \text{PV of cash flows} \quad 247,228 \\
 - \text{cost} \quad 240,000 \\
 \hline
 \quad \quad \quad 7,228
 \end{array}$$

A

3. Barber Corporation is considering purchasing a new machine to use in its production process. The machine costs \$20,000 and is expected to have a 5 year useful life and no salvage value. It is expected that the annual net cash flow from this new machine will be \$2,500. Determine the payback period for this investment.

- a. 8 years
- b. 6 years
- c. 4 years
- d. 1 year
- e. 16 years

$$\frac{20,000}{2,500} = \frac{\text{cost}}{\text{ann cash flow}} = 8 \text{ years}$$

SHORT PROBLEM

A company is considering whether to purchase a new machine that would cost \$50,000, have a four-year life and no salvage value. It would be depreciated with the straight-line method. Revenues are assumed to occur near the end of each year. The company would expect to generate annual income in each of the next four years as shown below:

Sales		\$210,000
Costs:		
Materials, labor, and overhead <u>other than depreciation</u>	\$115,000	
Depreciation on the new machine	12,500	
Selling and administrative expenses	65,000	
		<u>192,500</u>
Income before income taxes		\$17,500
Income taxes		7,000
Net Income		<u>\$10,500</u>

1. This machine is expected to produce an annual net cash flow of \$ 23000.

Net Income + Dpm
 $10,500 + 12,500 = 23,000$

2. The expected payback period on this machine is: _____ years.

Cost 50,000
 annual cash flow 23,000 = 2.17 years or 2 years & 2 mo

3. The expected average investment in this machine is: \$ 25,000 (denominator below)

$$\frac{\text{Avg Ann GAAP NI}}{\text{Avg Inv.}} = \frac{10,500}{\frac{(50,000 + 0)}{2}} =$$

4. The expected rate of return on the average investment in this machine is: 42%

See above

5. If the company has a 10% minimum desired compounded rate of return on capital investments, the net present value of the expected cash flows from this machine discounted at 10% is: \$ 22,908

Cash Flow 23,000 x 3,1699 = 72,908
 PV of annuity where $i = 10\%$
 $n = 4$
 Net PV = $\frac{50,000}{8} = 22,908$