

Question 1 (Chapter 9)

On March 31, Holmes Inc, a merchandising firm, had inventory of 38,000 units and accounts receivable totalling \$105,000. Sales in units have been budgeted as follows for the next four months:

April	60,000
May	75,000
June	90,000
July	81,000

Holmes' board of directors has established a policy to commence in April that the inventory at the end of each month should contain 20% of the units required for the following month's budgeted sales.

The selling price is \$3 per unit. 20% of sales are paid for by customers in the month of the sale; the balance is collected in the following month.

Required:

- a) Prepare a merchandise purchases budget showing how many units should be purchased for each of the months April, May and June.
- b) Prepare a schedule of expected cash collections for each of the months April, May and June.

Question 2 (Chapter 9)

Johnston Company has planned the following sales for the next four months:

	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
Budgeted Sales	\$60,000	\$50,000	\$80,000	\$70,000

Sales are made 30% for cash and 70% on account. From experience, the company has learned that a month's sales on account are collected according to the following pattern:

Month of sale	50%
First month following sale	30%
Second month following sale	18%
Uncollectible	2%

The company requires a minimum cash balance of \$4,000 to start a month. The beginning cash balance in November is budgeted to be \$5,000.

Required:

Compute the budgeted cash receipts and budgeted cash available for November.

Question 3 (Chapter 10)

Harper Company's standard and actual costs per unit for the most recent period, during which 400 units were actually produced, are given below:

	<u>Standard</u>	<u>Actual</u>
Materials:		
Standard: 2 metres at \$1.50 per m.	\$ 3.00	
Actual: 2.1 metres. at \$1.60 per m.		\$ 3.36
Direct labour:		
Standard: 1.5 hrs. at \$6.00 per hr.	9.00	
Actual: 1.4 hrs. at \$6.50 per hr.		9.10
Variable overhead:		
Standard: 1.5 hrs. at \$3.40 per hr.	5.10	
Actual: 1.4 hrs. at \$3.10 per hr.		<u>4.34</u>
Total unit cost	<u>\$17.10</u>	<u>\$16.80</u>

Required:

From the above information, compute the following variances. Show whether the variance is favourable (F) or unfavourable (U):

- a) Materials price variance
- b) Materials quantity variance
- c) Direct labour rate variance
- d) Direct labour efficiency variance

Question 4 (Chapter 10)

Michael Scott's Paper Company uses a standard cost system in which manufacturing overhead costs are applied to units of product on the basis of machine hours. The company's condensed flexible budget for manufacturing overhead is given below:

	Per <u>Machine Hour</u>	<u>Machine Hours</u>		
		<u>20,000</u>	<u>25,000</u>	<u>30,000</u>
Variable overhead costs	\$3	\$ 60,000	\$ 75,000	\$ 90,000
Fixed overhead costs		<u>300,000</u>	<u>300,000</u>	<u>300,000</u>
Total overhead costs		<u>\$360,000</u>	<u>\$375,000</u>	<u>\$390,000</u>

The denominator level of activity is 30,000 machine hours. Standards call for 2.5 machine hours per unit of output. Actual activity and manufacturing overhead costs for the year are given below:

Units produced	12,800 units
Machine hours used	31,600 machine hours
Overhead costs incurred:	
Variable costs	\$ 96,000
Fixed costs	\$297,000

Required:

- a) What are the standard hours allowed for the output?
- b) What was the variable overhead spending variance?
- c) What was the variable overhead efficiency variance?
- d) What was the fixed overhead budget variance?
- e) What was the fixed overhead volume variance?

Question 5 (Chapter 11)

Beaker Company
Balance Sheet

	Beginning Balance	Ending Balance
Assets:		
Cash	50,000	70,000
Accounts Receivable	20,000	25,000
Inventory	30,000	35,000
Plant and Equip.	120,000	110,000
Investment in Cedar Company	80,000	100,000
Land (undeveloped)	170,000	170,000
Total Assets	470,000	510,000
Liabilities and equity:		
Accounts payable	70,000	90,000
Long-term debt	250,000	250,000
Owner's equity	150,000	170,000
Total liabilities and equity	470,000	510,000

Beaker Company
Income Statement

Sales		414,000
Operating Expenses		351,900
Net operating income		62,100
Less interest and taxes:		
Interest	30,000	
Taxes	10,000	40,000
Operating Income		22,100

The company paid dividends of \$4,100 last year. The “Investment in Cedar Company” on the balance sheet represents an investment in the stock of another company.

Required:

- a) Compute the company’s margin, turnover, and return on investment for last year.
- b) The Board of Directors of Beaker Company have set a minimum required return of 15%. What was the company’s residual income last year?

Question 6 (Chapter 11)

The following data have been extracted from the year-end reports of Company ABC:

Sales	?
Operating income	?
Average operating assets	\$250,000
Margin	8%
Turnover	12
Return on investment	?

Required:

Fill in the missing data on the above table.

Question 7 (Chapter 12)

Charter Sports Equipment manufactures round, rectangular, and octagonal trampolines. Data on sales and expenses for the past month follow:

	Total	Trampoline		
		Round	Rectangular	Octagonal
Sales	1,000,000	140,000	500,000	360,000
Less: Variable expenses	410,000	60,000	200,000	150,000
Contribution margin	590,000	80,000	300,000	210,000
Less: fixed expenses				
Advertising - traceable	216,000	41,000	110,000	65,000
Depreciation of special equipment	95,000	20,000	40,000	35,000
Line supervisors' salaries	19,000	6,000	7,000	6,000
General overhead (untraceable)	200,000	28,000	100,000	72,000
Total fixed expenses	530,000	95,000	257,000	178,000
Operating Income (loss)	60,000	(15,000)	43,000	32,000

Management is concerned about the continued losses shown by the round trampolines and wants a recommendation as to whether or not the line should be discontinued. The special equipment used to produce the trampolines has no resale value. If the round trampoline model is dropped, the two line supervisors assigned to the model would be discharged.

Required:

1. Should production and sale of the round trampolines be discontinued? You may assume that the company has no other use for the capacity now being used to produce the round trampolines. Show computations to support your answer
2. Recast the above data in a format that would be more usable to management in assessing the long-run profitability of the various product lines.

Question 8 (Chapter 12)

Chip, the president of XYZ company is trying to decide whether he should rent new equipment and continue to make its subassemblies internally or whether it should discontinue production of its subassemblies and purchase them from an outside supplier. The alternatives follow:

Alternative 1: Rent new equipment for producing the subassemblies for \$60,000 per year.

Alternative 2: Purchase subassemblies from an outside supplier for \$8 each.

The current costs per unit of producing the subassemblies internally (with the old equipment) are given below. These costs are based on a current activity level of 40,000 subassemblies per year:

Direct materials	2.75
Direct labour	4.00
Variable overhead	0.60
Fixed overhead	<u>3.65</u>
Total cost per unit	<u><u>11.00</u></u>

Fixed overhead consists of \$0.75 supervision, \$0.90 depreciation and \$2 general company overhead.

Required:

The president is unsure what the company should do and would like an analysis showing the unit costs for each of the two alternatives given above. Assume that 40,000 subassemblies are needed each year. What course of action would you recommend to the president?

Question 9 (Chapter 13)

JenCo has \$350,000 to invest. The company is trying to decide between two alternative uses of the funds. The alternatives are:

<u>Description</u>	<u>Project A</u>	<u>Project B</u>
Cost of equipment	\$ 350,000	
Working capital investment		\$ 350,000
Annual cash inflows	\$ 100,500	\$ 80,000
Salvage value of equipment	\$ 6,000	
Life of project	4 years	4 years

The working capital needed for project B will be released at the end of four years for investment elsewhere. JenCo's discount rate is 15%

Required

- Compute the NPV for both projects. Round your answers to the nearest dollar.
- Which project will be accepted?

Question 10 (Chapter 13)

Tyrone is considering investing in an energy drink called Red Balls. He would need \$120,000 to start the business and annual operating costs will be \$20,000 per year. Tyrone will also need to invest \$30,000 for working capital and expects to generate \$100,000 cash inflows every year. Tyrone plans to operate the business for eight years. At the end of year 8, he estimates that the equipment could be sold for 10% of its original cost. Tyrone uses a discount rate of 16%.

Required:

Compute this investment's net present value.

FORMULAS**Chapter 10**

Material variances:

Price variance:

$$= (AQ \times AP) - (AQ \times SP)$$

$$= AQ (AP - SP)$$

Quantity variance:

$$= (AQ \times SP) - (SQ \times SP)$$

$$= SP (AQ - SQ)$$

Labour variances:

Labour rate variance:

$$= (AH \times AR) - (AH \times SR)$$

$$= AH (AR - SR)$$

Labour efficiency variance:

$$= (AH \times SR) - (SH \times SR)$$

$$= SR (AH - SH)$$

Variable overhead Variances:

Spending variance:

$$= (AH \times AR) - (AH \times SR)$$

Efficiency variance:

$$= (AH \times SR) - (SH \times SR)$$

Fixed overhead budget variances:

$$\text{Budget variance} = \text{Actual fixed overhead} - \text{Flexible budget fixed overhead}$$

$$\text{Volume variance} = \text{Fixed portion of predetermined overhead rate} \times (\text{Denominator hours} - \text{Standard hours allowed})$$

Chapter 11

$$\text{Margin} = \text{Operating income} / \text{Sales}$$

$$\text{Turnover} = \text{Sales} / \text{Average operating assets}$$

$$\text{ROI} = \text{Margin} \times \text{Turnover}$$

OR

$$\text{ROI} = \text{Margin} \times \text{Turnover}$$

$$= (\text{Operating income} / \text{Sales}) \times (\text{Sales} / \text{Average operating assets})$$

$$= \text{Operating income} / \text{Average operating assets}$$

Question 1 Answer

a)		April	May	June
Required purchases		<u>37,000</u>	<u>78,000</u>	<u>88,200</u>

Remember:

- Required ending inventory is 20% of the following month's budgeted sales (given)
- Beginning inventory is the same as ending inventory for the previous month

b)		April	May	June	Total
Total cash collections		<u>\$141,000</u>	<u>\$189,000</u>	<u>\$234,000</u>	<u>\$564,000</u>

Question 2 Answer

Total cash available = 75,060

Question 3 Answer

- a) Materials price variance = \$84 U
- b) Materials quantity variance = \$60 U
- c) Direct labour rate variance = \$280 U
- d) Direct labour efficiency variance = \$240 F

Question 4 Answer

- a) 32,000 machine hours
- b) \$1,200 unfavourable
- c) \$1,200 favourable
- d) \$3,000 favourable
- e) \$20,000 favourable

Question 5 Answer

- a) Margin = 15%
- Turnover = 1.8
- ROI = 27%
- b) Residual income = 27,600

Question 6 Answer

Sales = 3,000,000

Operating income = 240,000

ROI = 96%

Question 7 AnswerPart 1:

Operating income would decrease by 33,000 if they drop the round trampoline, so they should keep the segment.

Part 2:

	Total	Trampoline		
		Round	Rectangular	Octagonal
Sales	1,000,000	140,000	500,000	360,000
Less: Variable expenses	410,000	60,000	200,000	150,000
Contribution margin	590,000	80,000	300,000	210,000
Less: fixed expenses				
Advertising - traceable	216,000	41,000	110,000	65,000
Depreciation of special equipment	95,000	20,000	40,000	35,000
Line supervisors' salaries	19,000	6,000	7,000	6,000
Total fixed expenses	330,000	67,000	157,000	106,000
Operating Income (loss)	260,000	13,000	143,000	104,000
Less: common fixed expenses	200,000			
Operating income (loss)	60,000			

Question 8 Answer

Cost of making = \$9.60

Cost of buying = \$8.00

They should buy the unit since it will cost \$1.60 less.

Question 9 Answer

a) Project A NPV: (59,641)
Project B NPV: 78,600

b) They should accept project B because it has a higher NPV.

Question 10 Answer

Total NPV = 210,330