

The following aids can be used: a calculator in accordance with the instructions given by the Board of Examiners and a dictionary.

Hint: A maximum of 60 points can be reached from solving the 3 problems below.

Problem 1 (20 points): Hint: If necessary round to 3 digits after the decimal point!

Kevin Brickman, managing director of the South Consulting Group, is examining how variable overhead costs behave with changes in monthly professional labor-hours billed to clients. Monthly data for the most recent 7-months period are:

Month	Variable Overhead Costs (in 1,000 \$)	Professional Labor-Hours Billed to Clients
1	69	47
2	61	29
3	64	42
4	77	75
5	71	55
6	74	65
7	88	101

Required:

1. Use the high-low-method to compute the cost function. Determine the cost prediction for next month if 55 labor-hours are anticipated to be billed to clients?

Cost function: _____ Cost prediction: _____

2. Determine the underlying cost function using the least-square-method and compute the cost prediction for next month if 55 labor-hours are anticipated to be billed to clients.

Hint: The formulae for a and b in the regression line ($Y = a + bX$) are:

$$a = \frac{(\sum Y)(\sum X^2) - (\sum X)(\sum XY)}{n(\sum X^2) - (\sum X)(\sum X)} \quad b = \frac{n(\sum XY) - (\sum X)(\sum Y)}{n(\sum X^2) - (\sum X)(\sum X)}$$

Cost function: _____ Cost prediction: _____

3. What results would be obtained using the least-square-method if the observations would consist only of month 2 and month 7?

Cost function: _____ Cost prediction: _____

4. Shortly explain advantages and disadvantages of the high-low method compared to the least-square-method.

Problem 2 (30 points):

King Kong Statuary manufactures bust statues of famous cinematic figures. All statues are the same size. Each unit requires the same amount of resources. The following information is from the static budget for 2010:

Expected production and sales	7,500 units
Total fixed costs	\$1,800,000

Standard quantities and standard prices follow for direct materials and direct manufacturing labor.

	Standard quantity per unit	Standard price
Direct materials	7 pounds	\$ 34 per pound
Direct manufacturing labor	3 hours	\$ 18 per hour

During 2010, actual number of units produced and sold was 8,500. Actual cost of direct materials used was \$1,872,000, based on 52,000 pounds purchased at \$36 per pound. Direct manufacturing labor-hours actually used were 34,000, at the rate of \$24 per hour. Actual fixed costs were \$1,990,000. There were no beginning or ending inventories.

Required

1. Calculate sales-volume variance and flexible-budget variance for total costs.

Sales volume variance for total costs: _____

Flexible-budget variance for total costs: _____

2. Compute price and efficiency variances for direct materials and direct manufacturing labor.

Direct materials

Price variance: _____

Efficiency variance: _____

Direct manufacturing labor

Price variance: _____

Efficiency variance: _____



Problem 3 (10 points):

Answer the following multiple choice questions by using the space provided below each question to enter the respective letter. Note that only one answer is correct. Each correct answer gives **two** points and each false answer will result in the deduction of **one** point. But the minimum possible number of points is zero for this problem.

1. A cost that is related to a particular cost object but cannot be traced to it in an economically feasible way is always considered as:

- a) variable cost
- b) fixed cost
- c) indirect cost
- d) direct cost

answer:

2. The breakeven point is the sales level at which

- a) variable cost is zero
- b) contribution margin is zero
- c) the total revenue line intersects the fixed cost line
- d) sales minus variable expenses equals fixed expenses

answer:

3. Learning curves

- a) measure how labor-hours per unit rise as units of production increase.
- b) result from the fact that workers become more familiar with their tasks and their efficiency improves as more units are produced.
- c) cause cost functions to be linear.
- d) are used to predict how total labor-hours, or labor-costs will decline as more units are produced.

answer:

4. Which of the following statements concerning standard costing is incorrect?

- a) Costs of every product or service planned to be worked on during the period can be computed at the start of that period.
- b) Overhead costs are allocated on the basis of the standard overhead-cost rates times the standard quantities of the allocation bases allowed for the actual outputs produced.
- c) A production-volume variance cannot occur under standard costing.
- d) Direct costs are traced to output produced by multiplying the standard prices or rates by the standard quantities of inputs allowed for actual outputs produced.

answer:

5. Which of the following statements concerning absorption costing is incorrect?

- a) Absorption costing differs from variable costing in the treatment of fixed manufacturing overhead.
- b) Under absorption costing, fixed manufacturing overhead are expensed fully in the period in which they are incurred.
- c) If performance evaluation is based on absorption-costing operating income, managers might be induced to increase production and build up inventories.
- d) It is possible that the income under variable costing will be the same as under absorption costing.

answer:

