



7

Integrated Accounting Systems

Integrated Accounting Systems

7

LEARNING OUTCOMES

After completing this chapter, you should be able to:

- ▶ explain the principles of manufacturing accounts and the integration of the cost accounts with the financial accounting system;
- ▶ prepare a set of integrated accounts, given opening balances and appropriate transactional information, and show standard cost variances.

7.1 Introduction

The systems that are used to account for costs will vary between organisations. Each organisation will design its system to suit its own needs, taking into account factors such as statutory accounting requirements and management information needs. The accounting systems that are in use range from very simple manual systems to sophisticated computerised systems capable of producing detailed reports on a regular or an *ad hoc* basis.

In this chapter, you will learn about the principal accounting entries within integrated accounting systems. You will also be applying your knowledge of standard cost variances when you learn how to record variances in an integrated accounting system.

7.2 An integrated accounting system



The CIMA *Terminology* defines integrated accounts as a ‘set of accounting records that integrates both financial and cost accounts using a common input of data for all accounting purposes’.

Therefore, in an integrated system the cost accounting function and the financial accounting function are combined in one system, rather than separating the two sets of accounts in two separate ledgers.

The main advantages of integrated systems are as follows:

- (a) Duplication of effort is avoided and there is less work involved in maintaining the system than if two sets of accounts are kept.
- (b) There is no need for the periodic reconciliations of the two sets of accounts which are necessary with non-integrated systems.
- (c) Maintaining a single set of accounts avoids the confusion that can arise when two sets of accounts are in existence which each contain different profit figures.

The main disadvantage of integrated accounts is that a single system is used to provide information both for external and internal reporting requirements. The need to provide information for statutory purposes may influence the quality of information which can be made available for management purposes. For example, it may be more useful for management purposes to have inventory valued on a LIFO basis. However, this would not be acceptable for external reporting purposes and the latter requirement may prevail to the detriment of management information.

7.3 Accounting for the cost of labour

Before we can begin to look at integrated accounts in operation, we need to spend some time discussing the detail of accounting for the cost of labour.

7.3.1 Deductions from employees' wages

In the United Kingdom, employees pay income tax, usually under the pay-as-you-earn (PAYE) system. Employers deduct income tax from gross wages before they are paid to the employee. Employers also deduct a social security tax called *National Insurance*. The *employee's* National Insurance (NI) contributions are deducted from gross wages to determine the net wage to be paid to the employee. The employer will pay the deducted tax and NI to the relevant authorities on behalf of the employee.

In addition, the employer pays *employer's* NI contributions based on the level of the employee's wages. This, then, is an added cost of employment: it is often referred to as an *employment-related cost*.

Some organisations treat the cost of employer's NI as an indirect cost. However, others regard this related employment cost as part of the wage cost of each direct employee and would share it among the tasks completed by adding it to the gross wages value, thus treating it as part of direct wages cost.

7.3.2 Overtime premium

It is common for hours worked in excess of the basic working week to be paid at a higher rate per hour. The extra amount is usually referred to as overtime premium. This overtime premium may be caused by the specific request of a customer who requires a job to be completed early or at a specific time, or may have resulted because of the organisation's need to complete work which would not be finished without the working of overtime. In the situation caused by the customer, the customer should be advised that overtime would be required and that this cost would be charged to them. Thus, in this situation, the overtime premium can be clearly identified as being caused by that particular task and is a direct cost which should be attributed to it. In other more general circumstances the cost of the overtime premium is regarded as an indirect cost, even the premium that is paid to direct workers, because it cannot be identified with a specific cost unit.

7.3.3 Bonus earnings

The earning of bonuses, if paid on an individual task basis, can be clearly attributed to a particular task and so would be a direct labour cost of this task. However, if the bonus system accumulates the total standard time and hours worked for a particular pay period and then calculates the bonus based on these totals, any bonus will usually be treated as an indirect cost.

7.3.4 Idle time

Idle-time payments are made when an employee is available for work and is being paid, but is not carrying out any productive work. Idle time can arise for various reasons including machine breakdown, lack of orders or unavailability of materials. Idle time must be recorded carefully and management must ensure that it is kept to a minimum. Idle time payments are treated as indirect costs in the analysis of wages.

7.3.5 Example: analysis of labour costs

The wages analysis for cost centre 456 shows the following summary of gross pay:

	<i>Direct employees</i>	<i>Indirect employees</i>
	£	£
Basic pay – ordinary hours	48,500	31,800
Overtime pay – basic rate	1,600	2,800
– premium	800	1,400
Bonuses paid	<u>5,400</u>	<u>8,700</u>
Total gross pay	<u>56,300</u>	<u>44,700</u>

Which of these are direct labour costs and which are indirect labour costs?

Solution

There is no indication that the overtime and bonuses can be specifically identified with any particular cost unit. Therefore, the overtime premium and the bonuses are indirect costs, even the amounts which were paid to direct employees. The wages can be analysed as follows:

	<i>Direct labour cost</i>	<i>Indirect labour cost</i>
	£	£
Basic pay	48,500	31,800
Overtime pay – basic rate	1,600	2,800
– premium		2,200
Bonuses paid	<u>50,100</u>	<u>14,100</u>
	<u>50,100</u>	<u>50,900</u>

It would not be ‘fair’ to charge the overtime premium of direct workers to the cost unit which happened to be worked on during overtime hours if this unit did not specifically cause the overtime to be incurred. Therefore, the premium is treated as an indirect cost of all units produced in the period.

The direct labour cost of £50,100 can be directly identified with cost units and will be charged to these units based on the analysis of labour time. The indirect costs cannot

be identified with any particular cost unit and will be shared out over all units, using the methods described in Chapter 3.

7.4 Integrated accounts in operation

The following example will demonstrate the double-entry principles involved in an integrated system. Make sure that you understand which accounts are used to record each type of transaction, before you move on to the next example, which contains figures.

7.4.1 Example: the main accounting entries in an integrated system

Figure 7.1 shows the flow of accounting entries within an integrated system for the following transactions:

- (i) The purchase of raw materials on credit terms.

Debit Raw materials control
 Credit Payables control

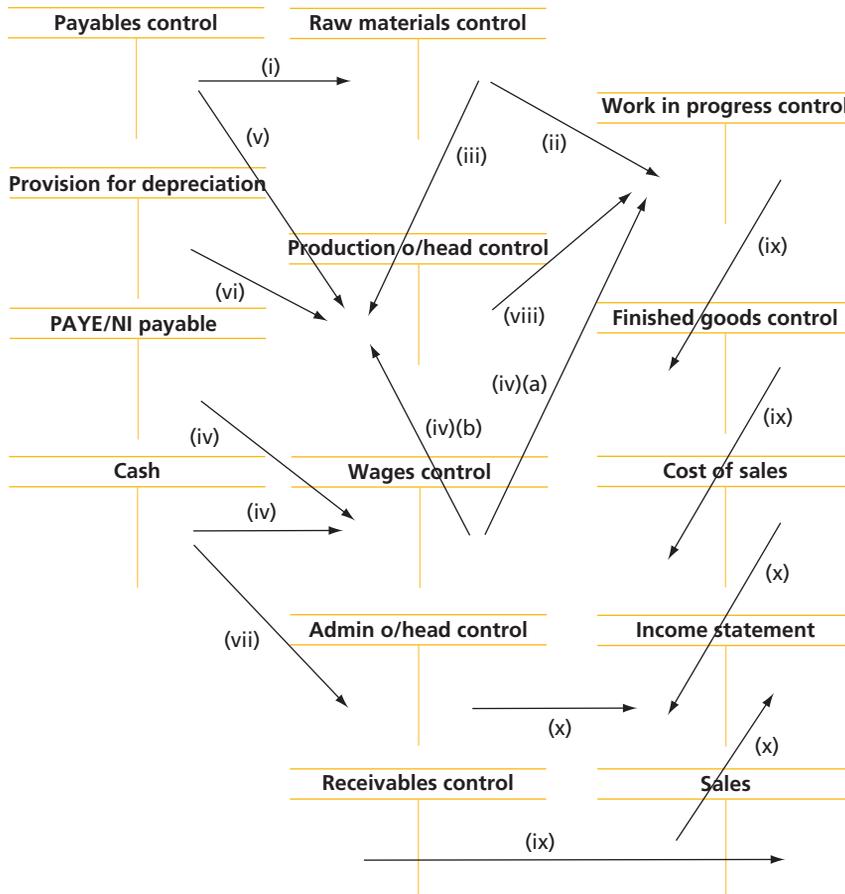


Figure 7.1 Some of the accounting entries in an integrated system

- (ii) The issue to production of part of the consignment received in (i) above.

Debit	Work in progress control
Credit	Raw materials control

Direct materials costs are charged to the work in progress account.

- (iii) The issue, as indirect materials, of part of the consignment received in (i) above.

Debit	Production overhead control
Credit	Raw materials control

Indirect production costs (in this case indirect materials costs) are collected in the production overhead control account for later absorption into production costs.

- (iv) A cash payment of wages, after deduction of PAYE and National Insurance (a) to direct workers; and (b) to indirect workers associated with production.

Debit	Wages control
Credit	Cash/Bank

with the net amount of wages actually paid, after deductions.

Debit	Wages control
Credit	PAYE/NI payable

with the deductions for PAYE and National Insurance.

The wages control account has now been debited with the gross amount of total wages. This gross amount must then be charged out according to whether it is direct or indirect wages. The direct wages are charged to work in progress (a). The indirect wages are collected with other indirect costs in the production overhead control account (b) for later absorption into production costs.

Later in the period when the payment is made of the amount owing for PAYE/NI, the relevant entries will be:

Debit	PAYE/NI payable
Credit	Cash/Bank

- (v) Electricity for production purposes, obtained on credit.

Debit	Production overhead control
Credit	Payables control

- (vi) Depreciation of machinery used for production.

Debit	Production overhead control
Credit	Provision for depreciation

These last two items are both production overhead costs which are being accumulated for later absorption into production costs.

- (vii) Cash paid for office expenses.

Debit	Administration overhead control
Credit	Cash account

- (viii) Absorption of production overhead, using a predetermined rate.

Debit	Work in progress control
Credit	Production overhead control

Once all of the production overhead has been accumulated in the overhead control account, a predetermined rate is used to absorb it into the cost of work in progress. The work in progress account now contains charges for direct costs and for absorbed production overheads.

- (ix) The sale, on credit, of all goods produced in the month.

Debit	Receivables control
Credit	Sales account

with the sales value achieved.

Debit	Finished goods control
Credit	Work in progress control

This transfers the cost of the completed goods to the finished goods inventory account. This is usually done in stages as production is completed during the month. For demonstration purposes this has been simplified to show one transfer at the end of the month.

Debit	Cost of sales account
Credit	Finished goods control

This transfers the cost of the goods sold from the inventory account. This is also usually done in stages as inventory is sold during the month.

- (x) The summary income statement is prepared for the month.

Debit	Income statement
Credit	Cost of sales account
Debit	Income statement
Credit	Administration overhead control

(Alternatively, the administration overhead control account balance may first be transferred to the cost of sales account and from there to the income statement.)

This transfers the costs for the month to the income statement, to be offset against the sales revenue which is transferred from the sales account:

Debit	Sales account
Credit	Income statement

This illustration has been simplified to demonstrate the main accounting flows. For example, in practice there would be more items of production overhead and administration overhead. There would also be expenditure on other types of overhead such as selling and distribution costs. Control accounts would be opened for these costs and they would be dealt with in the same way as the administration overhead in this example.

7.4.2 Accounting for under- or over-absorbed overheads

Take a moment to look back at the production overhead control account in the example you have just studied.

You will see that the production overhead control account has acted as a collecting place for the production overheads incurred during the period. In this simplified example the account has been debited with the following overhead costs:

- indirect materials issued from stores
- the wages cost of indirect workers associated with production
- the cost of electricity for production purposes
- the depreciation of machinery used for production.

At the end of the period the production overhead cost is absorbed into work in progress costs using the predetermined overhead absorption rate. The amount absorbed is credited in the production overhead control account and debited in the work in progress account.

The remaining balance on the production overhead control account represents the amount of production overhead which is under-absorbed (debit balance) or over-absorbed (credit balance).

If overheads are under-absorbed it effectively means that product costs have been understated. It is not usually considered necessary to adjust individual unit costs and therefore inventory values are not altered. However, the cost of units sold will have been understated and therefore the under-absorption is charged to the income statement for the period.

The reverse is true for any over absorption, which is credited in the income statement for the period.

Some organisations do not charge or credit the under or over absorption to the income statement every period. Instead, the balance is carried forward in the control account and at the end of the year the net balance is transferred to the income statement. This procedure is particularly appropriate when activity fluctuations cause under and over absorptions which tend to cancel each other out over the course of the year.



Note that under-absorbed or over-absorbed overhead is sometimes referred to as under-recovered or over-recovered overhead.

7.4.3 Example: integrated accounts

You should now be in a position to tackle a fully worked example on integrated accounts.

Although you would not be required to prepare a full set of ledger accounts in your assessment, it is still important for you to work carefully through the example. This will ensure that you have a sound knowledge of how to account for all of the main transactions in an integrated accounting system.



Exercise 7.1

See if you can complete the relevant ledger accounts yourself before looking at the solution.

IA Ltd produces a product in two processes. Output from process 1 is transferred to process 2 and from there to finished goods stores.

IA Ltd operates an integrated accounting system and, based on the data given below, you are required to prepare the relevant ledger accounts for the month ended 31 October, year 2, close the accounts at the end of the month and draw up the income statement for the period and the balance sheet as at 31 October year 2.

Account balances at 1 October, year 2

	£
Receivables	60,000
Payables	75,000
Provision for depreciation, plant and machinery	60,000
Inventories:	
Raw materials	350,000
Work in process 1	120,000
Work in process 2	150,000
Finished goods	30,000
Bank	31,000
Sales	500,000
Cost of sales	370,000
Administration overhead	60,000
Selling and distribution overhead	40,000
Production overhead, over-/ under-absorbed (credit balance brought forward)	10,500
Share capital and reserves	735,500
Plant and machinery at cost	170,000

Transactions for the month ended 31 October, year 2 included:

	£
Direct wages incurred:	
Process 1	42,400
Process 2	64,600
Direct wages paid	100,000
Production salaries paid	85,000
Production expenses paid	125,000
Paid to suppliers	165,000
Received from credit customers	570,000
Administration overhead paid	54,000
Selling and distribution overhead paid	42,000
Materials purchased on credit	105,000
Materials returned to suppliers	5,000
Materials issued to:	
Process 1	68,000
Process 2	22,000
Goods sold on credit:	
At sales prices	550,000
At cost	422,400
Transfer from process 1 to process 2	242,200
Transfer from process 2	448,400

Provision for depreciation of plant and machinery is £4,000 for the month.
The predetermined overhead absorption rates are:

Process 1 – 250% of direct wages cost
 Process 2 – 150% of direct wages cost

 **Solution**

The first step is to open a ledger account for each balance listed. Enter the opening balances, which are all labelled as item 1 in the solution which follows. All of the other transaction numbers relate to the explanatory notes which you will find at the end of the ledger accounts.

Receivables			
	£		£
1 Balance b/f	60,000	Bank	570,000
7 Sales	<u>550,000</u>	13 Balance c/f	<u>40,000</u>
	<u>610,000</u>		<u>610,000</u>

Payables			
	£		£
Bank	165,000	1 Balance b/f	75,000
Raw materials	5,000	Raw materials	105,000
13 Balance c/f	<u>10,000</u>		
	<u>180,000</u>		<u>180,000</u>

Provision for depreciation			
	£		£
13 Balance c/f	64,000	1 Balance b/f	60,000
	<u>64,000</u>	10 Production o/h control	<u>4,000</u>
			<u>64,000</u>

Raw materials inventory			
	£		£
1 Balance b/f	350,000	Payables	5,000
Payables	105,000	6 Process 1	68,000
		6 Process 2	22,000
		13 Balance c/f	<u>360,000</u>
	<u>455,000</u>		<u>455,000</u>

Finished goods inventory			
	£		£
1 Balance b/f	30,000	8 Cost of sales	422,400
9 Process 2	<u>448,400</u>	13 Balance c/f	<u>56,000</u>
	<u>478,400</u>		<u>478,400</u>

Work in process 1

	£		£
1 Balance b/f	120,000	Process 2	242,200
2 Wages control	42,400	13 Balance c/f	94,200
6 Raw materials	68,000		
11 Overhead control	106,000		
	<u>336,400</u>		<u>336,400</u>

Work in process 2

	£		£
1 Balance b/f	150,000	9 Finished goods	448,400
2 Wages control	64,600	13 Balance c/f	127,300
6 Raw materials	22,000		
Process 1	242,200		
11 Overhead control	96,900		
	<u>575,700</u>		<u>575,700</u>

Bank

	£		£
1 Balance b/f	31,000	3 Wages control	100,000
Receivables	570,000	4 Production overhead control	85,000
		5 Production overhead control	125,000
		Payables	165,000
		Admin. Overhead	54,000
		Selling overhead	42,000
		13 Balance c/f	30,000
	<u>601,000</u>		<u>601,000</u>

Sales

	£		£
13 Income statement	1,050,000	1 Balance b/f	500,000
	550,000	7 Receivables	
	<u>1,050,000</u>		<u>1,050,000</u>

Cost of sales

	£		£
1 Balance b/f	370,000	13 Income statement	792,400
8 Finished goods	422,400		
	<u>792,400</u>		<u>792,400</u>

Administration overhead			
	£		£
1 Balance b/f	60,000	13 Income statement	114,000
Bank	<u>54,000</u>		
	<u>114,000</u>		<u>114,000</u>

Selling and distribution overhead			
	£		£
1 Balance b/f	40,000	13 Income statement	82,000
Bank	<u>42,000</u>		
	<u>82,000</u>		<u>82,000</u>

Production overhead over-/under-absorbed			
	£		£
12 Overhead control	11,100	1 Balance b/f	10,500
		13 Income statement	600
	<u>11,100</u>		<u>11,100</u>

Share capital and reserves			
	£		£
Balance c/f	796,500	1 Balance b/f	735,500
		Profit for the period	61,000
	<u>796,500</u>		<u>796,500</u>

Plant and machinery at cost			
	£		£
1 Balance b/f	<u>170,000</u>	13 Balance c/f	<u>170,000</u>

Wages control			
	£		£
3 Bank	100,000	2 Process 1	42,400
Balance c/f	<u>7,000</u>	2 Process 2	64,600
	<u>107,000</u>		<u>107,000</u>

The control accounts for wages and for production overheads are opened as ‘collecting places’ for these costs. The wages can then be analysed and charged out as appropriate. The production overhead can be absorbed into the work in progress accounts.

Production overhead control			
	£		£
4 Bank	85,000	11 Process 1	106,000
5 Bank	125,000	11 Process 2	96,900
10 Depreciation	<u>4,000</u>	12 Under-absorbed	<u>11,100</u>
	<u>214,000</u>		<u>214,000</u>

Explanatory notes

1. These are the opening balances as given in the trial balance.
2. Direct wages incurred are credited to the wages control account and debited to the relevant work in process account. This looks strange at first because there is not yet any debit entry in the wages control account.
3. Now that the direct wages actually paid have been debited to the control account, you can see that there is a difference of £7,000 between the wages paid and wages incurred. This represents a £7,000 accrual for direct wages owing, which is carried down as a credit balance.
4. Production salaries are charged to the production overhead control account for later absorption into work in process costs.
The production salaries could alternatively have been charged first to the wages control account. They would then be transferred from there to the production overhead account, so the net effect is the same.
5. Production expenses are also collected in the production overhead control account for later absorption into work in process costs.
6. Direct materials issued from inventory are charged to the relevant work in process account.
Materials used for indirect production purposes (there are none in this example) would be debited to the production overhead control account.
7. The sales value of goods sold is credited to the sales account and debited to receivables.
8. The cost of the goods sold is transferred from finished goods inventory to the cost of sales account.
9. The output from process 2 is transferred to the finished goods inventory account.
10. The depreciation provision for plant and machinery is a production overhead cost. It must therefore be collected in the production overhead control account for later absorption into work in process costs.
11. Once all of the transactions from the question data have been entered, the next step is to absorb the production overhead into the two work in process accounts. Use the pre-determined overhead absorption rates that you are given.

$$\text{Process 1: Wages } £42,400 \times 250\% = £106,000$$

$$\text{Process 2: Wages } £64,600 \times 150\% = £96,900$$

12. The last control account to be dealt with is the one which you opened as a collecting place for production overhead costs. All of the production overhead costs incurred, including depreciation, have been debited to this account. The production overheads have been absorbed into the work in process accounts using the predetermined rates.

Therefore, the balance on this account represents the under- or over-absorbed production overhead for the period. In this example, it is transferred to a separate account and accumulated to be transferred to the income statement.

The debit balance on the production overhead control account means that the overhead was under-absorbed for this month.

- Now that all the transactions have been recorded the relevant balances can be transferred to the income statement and balance sheet. Before you read on, try to complete the final income statement and balance sheet for yourself, using the ledger accounts we have produced.

Income statement for the period ended 31 October year 2

	£	£
Sales		1,050,000
Cost of sales	792,400	
Under absorbed production overhead	<u>600</u>	
		<u>793,000</u>
Gross profit		257,000
Administration overhead	114,000	
Selling and distribution overhead	<u>82,000</u>	
		<u>196,000</u>
Profit to reserves		<u>61,000</u>

Balance sheet as at 31 October year 2

	£	£	£
Plant and machinery at cost			170,000
Provision for depreciation			<u>64,000</u>
			106,000
Current assets			
Raw material inventory		360,000	
Work in process 1 inventory		94,200	
Work in process 2 inventory		127,300	
Finished goods inventory		56,000	
Receivables		40,000	
Bank		<u>30,000</u>	
		<u>707,500</u>	
Current liabilities			
Payables	10,000		
Accrued wages	<u>7,000</u>	<u>17,000</u>	
			<u>690,500</u>
			<u>796,500</u>
Share capital and reserves			<u>796,500</u>



The layout of your balance sheet might be different from ours; but it should balance!

How did you get on?

If this is the first time that you have studied integrated accounts, it is important that you understand all of the entries in this example. Once you have checked each one carefully and understood it, put the example aside for a few days and then return to try it again without looking at the solution. You should be able to work all the way through without any errors (!)

7.5 Standard cost bookkeeping

In the remainder of this chapter you will learn how to record standard costs and variances in the ledger accounts. To be able to study this material effectively you must have a sound understanding of:

- (a) the workings of an integrated accounting system;
- (b) the calculation of cost variances in a standard costing system.

If you are not confident that you have a sound understanding of both of these subjects, then you should return and study them carefully before you begin on this section of the chapter.

7.6 Recording variances in the ledger accounts

A ledger account is usually kept for each cost variance. As a general rule, all variances are entered in the accounts at the point at which they arise. For example:

- (a) labour rate variances arise when the wages are paid. Therefore, they are entered in the wages control account. An adverse variance is debited in the account for wage rate variance and credited in the wages control account. For a favourable variance the entries would be the opposite way round;
- (b) labour efficiency variances arise as the employees are working. Therefore, the efficiency variance is entered in the work in progress account. An adverse variance is debited in the account for labour efficiency variance and credited in the work in progress account. For a favourable variance the entries would be the opposite way round.

7.6.1 General rules for recording variances

Although variations do exist, you will find the following general rules useful when you are recording variances in the ledger accounts:

- (a) The materials price variance is recorded in the materials inventory account. This is the procedure if the materials inventory is held at standard cost. We will learn more about this later in the chapter.
- (b) The labour rate variance is recorded in the wages control account.
- (c) The 'quantity' variances, that is, material usage, labour efficiency and variable production overhead efficiency, are recorded in the work in progress account.
- (d) The variance for variable production overhead expenditure is usually recorded in the production overhead control account.
- (e) Sales values are usually recorded at actual amounts and the sales variances are not shown in the ledger accounts.



Remember that the amount of variance is recorded in the relevant variance account (a debit for an adverse variance and a credit for a favourable variance). The ‘other side’ of the entries are those detailed in this list.

7.6.2 The income statement

You will see from this list that all of the variances are eliminated before any entries are made in the finished goods inventory account. The finished goods inventory is therefore held at standard cost and the transfer to the cost of sales account and to the income statement will be made at standard cost.

At the end of the period the variance accounts are totalled and transferred to the income statement. Adverse variances are debited to the income statement and favourable variances are credited.

In this way the actual cost (standard cost, plus or minus the variances) is charged against the sales value in the income statement for the period.

7.7 Standard cost bookkeeping: an example

Work carefully through the following example of integrated standard cost bookkeeping. It will also give you some useful practice at calculating cost variances.

JC Ltd produces and sells one product only, product J, the standard variable cost of which is as follows for one unit:

	£
Direct material X: 10 kg at £20	200
Direct material Y: 5 litres at £6	30
Direct wages: 5 hours at £6	30
Variable production overhead	<u>10</u>
Total standard variable cost	270
Standard contribution	<u>130</u>
Standard selling price	<u>400</u>

During April, the first month of the financial year, the following were the actual results for production and sales of 800 units:

	£	£
Sales on credit: 800 units at £400		320,000
Direct materials:		
X 7,800 kg	159,900	
Y 4,300 litres	23,650	
Direct wages: 4,200 hours	24,150	
Variable production overhead	<u>10,500</u>	
		<u>218,200</u>
Contribution		<u>101,800</u>

The material price variance is extracted at the time of receipt and the raw materials stores control account is maintained at standard prices. The purchases, bought on credit, during the month of April were:

X 9,000 kg at £20.50 per kg from K Ltd
Y 5,000 litres at £5.50 per litre from C plc

Assume no opening inventories, and no opening bank balance.
All wages and production overhead costs were paid from the bank during April.

You are required to:

- Calculate the variable cost variances for the month of April.
- Show all the accounting entries in T-accounts for the month of April. The work in progress account should be maintained at standard variable cost and each balance on the separate variance accounts is to be transferred to an income statement which you are also required to show.
- Explain the reason for the difference between the actual contribution given in the question and the contribution shown in your income statement extract.



Exercise 7.2

See if you can calculate all the variances before you look at the solution. You might also like to try to complete the bookkeeping entries yourself, using the earlier list of general rules to guide you.



Solution

- Direct material price variance*

<i>Material X</i>	£	
9,000 kg purchased should have cost ($\times \pounds 20$)	180,000	
But did cost ($9,000 \times \pounds 20.50$)	<u>184,500</u>	
Direct material price variance	<u>4,500</u>	adverse
 <i>Material Y</i>	£	
5,000 litres purchased should have cost ($\times \pounds 6$)	30,000	
But did cost ($5,000 \times \pounds 5.50$)	<u>27,500</u>	
Direct material price variance	<u>2,500</u>	favourable

Direct material usage variance

<i>Material X</i>	kg	
800 units produced should have used ($\times 10$ kg)	8,000	
But did use	<u>7,800</u>	
Variance in kg	<u>200</u>	favourable
\times standard price per kg ($\pounds 20$)		
Direct material usage variance	<u>£4,000</u>	favourable
 <i>Material Y</i>	Litres	
800 units produced should have used ($\times 5$ litres)	4,000	
But did use	<u>4,300</u>	
Variance in litres	<u>300</u>	adverse
\times standard price per litre ($\pounds 6$)		
Direct material usage variance	<u>£1,800</u>	adverse

Direct labour rate variance

	£	
4,200 hours should have cost (×£6)	25,200	
But did cost	<u>24,150</u>	
Direct labour rate variance	<u>1,050</u>	favourable

Direct labour efficiency variance

	Hours	
800 units produced should have taken (×5 hours)	4,000	
But did take	<u>4,200</u>	
Variance in hours	<u>200</u>	adverse
× standard labour rate per hour (£6)		
Direct labour efficiency variance	<u>£1,200</u>	adverse

Variable overhead expenditure variance

	£	
4,200 hours of variable overhead should cost (×£2)	8,400	
But did cost	<u>10,500</u>	
Variable overhead expenditure variance	<u>2,100</u>	adverse

Variable overhead efficiency variance

	£	
Variance in hours (from labour efficiency variance)	200	adverse
× standard variable overhead rate per hour	×£2	
Variable overhead efficiency variance	<u>£400</u>	adverse

- (b) The easiest way to approach this question is probably to follow the production through: deal first with the purchase and then the issue of the material; then move on to deal with the information about the wages. Lastly, prepare the control account for overheads, before dealing with the transfer from the work in progress account.

Numbers in brackets refer to the notes following the accounts.

Raw materials stores control			
	£		£
K Ltd: material X (1)	184,500	Direct material price variance:	
C plc: material Y (2)	27,500	material X (1)	4,500
Direct material price variance:		Work in progress (3)	
material Y (2)	2,500	material X (7,800 × £20)	156,000
		material Y (4,300 × £6)	25,800
		Closing inventory c/f	<u>28,200</u>
	<u>214,500</u>		<u>214,500</u>

K Ltd			
	£		£
Balance c/f	<u>184,500</u>	Raw materials stores control (1)	<u>184,500</u>

C plc			
	£		£
Balance c/f	<u>27,500</u>	Raw materials stores control (2)	<u>27,500</u>

Work in progress control			
	£		£
Raw material stores: (3)		Direct material usage	
material X	156,000	variance: (3)	
material Y	25,800	material Y	1,800
		Direct labour efficiency	1,200
		variance (6)	
Direct material usage		Variable overhead efficiency	400
variance: (3)		variance (7)	
material X	4,000	Finished goods: (8)	
Wages control (5)	25,200	800 units × £270	216,000
Production overhead control (7)	<u>8,400</u>		
	<u>219,400</u>		<u>219,400</u>

Wages control			
	£		£
Bank (4)	24,150	Work in progress	25,200
Labour rate variance (5)	<u>1,050</u>	(4,200 × £6) (5)	
	<u>25,200</u>		<u>25,200</u>

Bank			
	£		£
		Wages control (4)	24,150
		Production overhead control (7)	10,500

Production overhead control			
	£		£
Bank (7)	10,500	Work in progress (7) (4,200 × £2)	8,400
		Variable overhead expenditure variance (7)	<u>2,100</u>
	<u>10,500</u>		<u>10,500</u>

Finished goods control			
	£		£
Work in progress (8)	216,000	Cost of sales (8)	216,000

Cost of sales			
	£		£
Finished goods (8)	216,000	Income statement (8)	216,000

Sales			
	£		£
Income statement	320,000	Receivables	320,000

Receivables			
	£		£
Sales	320,000		

Direct material price variance			
	£		£
Raw material stores control (1)	4,500	Raw material stores control (2)	2,500
		Income statement (9)	<u>2,000</u>
	<u>4,500</u>		<u>4,500</u>

Direct material usage variance			
	£		£
Work in progress: material Y (3)	1,800	Work in progress: material X (3)	4,000
Income statement (9)	<u>2,200</u>		
	<u>4,000</u>		<u>4,000</u>

Direct labour rate variance			
	£		£
Income statement (9)	1,050	Wages control (5)	1,050

Direct labour efficiency variance			
	£		£
Work in progress control (6)	1,200	Income statement (9)	1,200

Variable overhead expenditure variance			
	£		£
Production overhead control (7)	2,100	Income statement (9)	2,100

Variable overhead efficiency variance			
	£		£
Production overhead control (7)	400	Income statement (9)	400

The income statement could also be shown as a T-account. However, a vertical presentation is probably preferable.

Income statement for April (extract)

	£	£	£
Sales			320,000
Cost of sales (8)			<u>216,000</u>
			104,000
Cost variances			
Direct material price	(2,000)		
Direct material usage	<u>2,200</u>		
		200	
Direct labour rate	1,050		
Direct labour efficiency	<u>(1,200)</u>		
		(150)	
Variable production overhead expenditure	(2,100)		
Variable production overhead efficiency	<u>(400)</u>		
		<u>(2,500)</u>	
Contribution			<u>(2,450)</u>
			<u>101,550</u>

Note: Variances in brackets are adverse.

Explanatory notes

1. The actual cost of material X purchases is debited to the raw materials stores control and credited to K Ltd. The adverse price variance is credited to the raw materials stores control and debited to the variance account. The net effect of these two entries is that the material is held in the stores account at standard cost.
2. The actual cost of material Y purchases is debited to the raw materials stores control and credited to C plc. To bring the inventory value of material Y up to standard cost, the favourable price variance is debited to the stores control account and credited to the variance account.
3. The standard cost of the actual material usage is transferred from the raw materials inventory to work in progress. The usage variances are transferred from work in progress to the material usage variance account. An adverse variance is debited to the variance account and credited to work in progress. A favourable variance is credited to the variance account and debited to work in progress.

The net balance for materials cost in the work in progress account is now equal to the standard material cost for 800 units. Check this for yourself.

4. The wages paid are collected in the control account.
5. The standard wages cost of the hours worked is debited to work in progress. The favourable labour rate variance is credited to the variance account.
6. The adverse labour efficiency variance is transferred from work in progress to the relevant variance account.

The net balance for wages cost in the work in progress account is now equal to the standard wages cost for 800 units. Check this for yourself.

7. The variable production overhead paid is collected in the production overhead control account. The standard variable overhead cost of the hours worked is then debited to work in progress. The adverse variable overhead expenditure variance is debited to the variance account.

The adverse variable overhead efficiency variance is transferred from work in progress to the relevant variance account.

Notice the similarity between the accounting entries for labour and for variable overhead.

8. The standard variable production cost of 800 units ($800 \times £270 = £216,000$) is transferred from work in progress to finished goods. Since no finished goods inventories are held (production is equal to sales), this amount is transferred at the end of the month to cost of sales, and from there to the income statement.
9. At the end of April, the balances on the variance accounts are transferred to the income statement.

- (c) The difference between the actual contribution given in the question and the contribution shown in the income statement extract in the solution to part (b) is £250.

	£
Actual contribution given in question	101,800
Contribution shown in solution to part (b)	<u>101,550</u>
Difference	<u>250</u>

This difference is caused by the treatment of the direct material price variance.

In the actual results given in the question, the material price variance on only the material actually used has been charged against the sales value. In the bookkeeping entries in part (b), the material price variances on all of the purchases for the month have been recorded and transferred to the income statement.

The difference is therefore represented by the price variance on the materials in inventory at the end of April.

<i>Direct material</i>	<i>Purchases</i>	<i>Usage</i>	<i>Inventory balance</i>	<i>Price variance per unit</i>	<i>Price variance in inventory</i>
X	9,000 kg	7,800 kg	1,200 kg	£20 – £20.50 = (£0.50)	£ (600)
Y	5,000 litres	4,300 litres	700 litres	£6 – £5.50 = £0.50	<u>£ 350</u>
					<u>£ (250)</u>

Note: Variances in brackets are adverse.

7.8 Valuing material inventory at actual cost

In chapter 5 you saw that the material price variance is calculated using a different method if inventory is valued at actual cost. If material inventory had been valued at actual cost in the previous example the material price variance would have been calculated as:

Direct material price variance

<i>Material X</i>	£	
7,800 kg used should have cost (×£20)	156,000	
But did cost	159,900	
Direct material price variance	<u>3,900</u>	adverse
 <i>Material Y</i>	£	
4,300 litres used should have cost (×£6)	25,800	
But did cost	23,650	
Direct material price variance	<u>2,150</u>	favourable

The raw materials stores control account would look like this:

Raw materials stores control			
	£		£
K Ltd: material X (9,000 × £20.50)	184,500	Work in progress: material X (7,800 × £20)	156,000
C plc: material Y (5,000 × £5.50)	27,500	material Y (4,300 × £6)	25,800
Direct material price variance: material Y	<u>2,150</u>	Direct material price variance: material X	3,900
	<u>214,150</u>	Closing inventory c/f	<u>28,450</u>
			<u>214,150</u>

Notice that the transfer to the work in progress account is the same as before, therefore that account will not be altered by the raw material inventory valuation method.

Check that the raw material inventory balance carried forward into May is correctly valued at actual cost.

	£
Material X: 1,200 kg × £20.50	24,600
Material Y: 700 litres × £5.50	<u>3,850</u>
Actual cost of material inventory	<u>28,450</u>

7.8.1 Which inventory valuation method is generally preferred?

It is generally accepted that it is better to value the raw material inventory at standard cost, for the following reasons:

- (a) The whole of the price variance is eliminated as soon as the raw materials are purchased. This means that inventories are valued at a uniform rate and that the price variances are highlighted earlier for management attention.
- (b) Raw materials are often purchased in single batches, then broken into several smaller batches for issue to production. If raw materials inventories are valued at actual cost, then a separate variance calculation is required for each issue. With valuation at standard cost, one single calculation is required on purchase.

7.9 Summary

Having read this chapter the main points that you should understand are as follows:

1. An integrated accounting system contains both financial and cost accounts and uses the same data for all accounting purposes.
2. Overtime premium is the extra rate paid per hour for working above an agreed number of hours in a period. It is usually an indirect cost unless the overtime has been worked at the specific request of a customer.
3. The wages control account acts as a collecting place for wage costs. The direct wages are then transferred to work in progress and the indirect wages are transferred to the production overhead control account.
4. The production overhead control account act as a collecting place for production overheads. At the end of the period the production overhead is absorbed into work in progress using the predetermined overhead absorption rate. The balance on the production overhead control account represents the under or over absorbed overhead for the period.
5. As a general rule, in a standard cost bookkeeping system, variances are entered in the accounts at the point at which they arise. A favourable variance is credited in the relevant variance account. An adverse variance is debited in the relevant variance account.

Revision Questions

7



Question 1 Multiple choice

- 1.1 A firm operates an integrated cost and financial accounting system. The accounting entries for an issue of direct materials to production would be:

<i>Debit</i>	<i>Credit</i>
(A) Work in progress control account	Stores control account
(B) Finished goods account	Stores control account
(C) Stores control account	Work in progress control account
(D) Cost of sales account	Work in progress control account

- 1.2 During a period £35,750 was incurred for indirect labour. In a typical cost ledger, the double entry for this is:

<i>Debit</i>	<i>Credit</i>
(A) Wages control account	Overhead control account
(B) WIP control account	Wages control account
(C) Overhead control account	Wages control account
(D) Wages control account	WIP control account

- 1.3 In an integrated cost and financial accounting system, the accounting entries for factory overhead absorbed would be:

<i>Debit</i>	<i>Credit</i>
(A) Work in progress control account	Overhead control account
(B) Overhead control account	Work in progress control account
(C) Overhead control account	Cost of sales account
(D) Cost of sales account	Overhead control account

- 1.4 At the end of a period, in an integrated cost and financial accounting system the accounting entries for £18,000 overheads under-absorbed would be:

<i>Debit</i>	<i>Credit</i>
(A) Work in progress control account	Overhead control account
(B) Income statement	Work in progress control account
(C) Income statement	Overhead control account
(D) Overhead control account	Income statement

- 1.5 In the cost ledger the factory cost of finished production for a period was £873,190. The double entry for this is

<i>Debit</i>	<i>Credit</i>
(A) Cost of sales account	Finished goods control account
(B) Finished goods control account	Work in progress control account
(C) Costing income statement	Finished goods control account
(D) Work in progress control account	Finished goods control account

- 1.6 XYZ Ltd operates an integrated accounting system. The material control account at 31 March shows the following information:

Material control account			
	£		£
Balance b/d	50,000	Production overhead control account	10,000
Payables	100,000	?	125,000
Bank	<u>25,000</u>	Balance c/d	<u>40,000</u>
	<u>175,000</u>		<u>175,000</u>

The £125,000 credit entry represents the value of the transfer to the

- (A) cost of sales account.
 (B) finished goods account.
 (C) income statement.
 (D) work in progress account.
- 1.7 In an integrated cost and financial accounting system the correct entries for the provision for depreciation of production machinery are:

<i>Debit</i>	<i>Credit</i>
(A) Provision for depreciation account	Work in progress account
(B) Work in progress account	Provision for depreciation account
(C) Overhead control account	Provision for depreciation account
(D) Provision for depreciation account	Overhead control account.

- 1.8 Data for the finishing department for the last quarter are as follows:

Budgeted cost centre overhead	£320,000
Actual cost centre overhead	£311,250
Budgeted direct labour hours	40,000
Actual direct labour hours	41,500

The accounting entries to record the under- or over-absorbed overhead for the quarter would be:

<i>Debit</i>		<i>Credit</i>	
(A) Overhead control account	£20,750	Income statement	£20,750
(B) Overhead control account	£8,750	Income statement	£8,750
(C) Income statement	£20,750	Overhead control account	£20,750
(D) Income statement	£8,750	Overhead control account	£8,750

1.9 Q Ltd uses an integrated standard costing system. In October, when 2,400 units of the finished product were made, the actual material cost details were:

Material purchased	5,000 units @ £4.50 each
Material used	4,850 units

The standard cost details are that two units of the material should be used for each unit of the completed product, and the standard price of each material unit is £4.70.

The entries made in the variance accounts would be:

<i>Material price variance account</i>	<i>Material usage variance account</i>
(A) Debit £970	Debit £225
(B) Debit £1,000	Debit £225
(C) Credit £970	Debit £235
(D) Credit £1,000	Debit £235

1.10 The bookkeeping entries in a standard cost system when the actual price for raw materials is less than the standard price are:

<i>Debit</i>	<i>Credit</i>
(A) Raw materials control account	Raw materials price variance account
(B) WIP control account	Raw materials control account
(C) Raw materials price variance account	Raw materials control account
(D) WIP control account	Raw materials price variance account

1.11 A firm uses standard costing and an integrated accounting system. The double entry for an adverse material usage variance is:

<i>Debit</i>	<i>Credit</i>
(A) Stores control account	Work in progress control account
(B) Material usage variance account	Stores control account
(C) Work in progress control account	Material usage variance account
(D) Material usage variance account	Work in progress control account

1.12 In a standard cost bookkeeping system, when the actual hourly rate paid for labour is less than the standard hourly rate, the double entry to record this is:

- (A) debit wages control account; credit labour rate variance account.
- (B) debit work in progress control account; credit labour rate variance account.
- (C) debit labour rate variance account; credit wages control account.
- (D) debit labour rate variance account; credit work in progress control account.

- 1.13** Gross wages incurred in department 1 in June were £54,000. The wages analysis shows the following summary breakdown of the gross pay:

	<i>Paid to direct labour</i>	<i>Paid to indirect labour</i>
	£	£
Ordinary time	25,185	11,900
Overtime		
basic pay	5,440	3,500
premium	1,360	875
Shift allowance	2,700	1,360
Sick pay	1,380	300
	<u>36,065</u>	<u>17,935</u>

What is the direct wages cost for department 1 in June?

- (A) £25,185
 (B) £30,625
 (C) £34,685
 (D) £36,065
- 1.14** A manufacturing firm is very busy and overtime is being worked.

The amount of overtime premium contained in direct wages would normally be classified as:

- (A) part of prime cost.
 (B) production overheads.
 (C) direct labour costs.
 (D) administrative overheads.



Question 2 Short objective-test questions

- 2.1** A company purchased materials costing £30,000. Of these, materials worth £1,000 were issued to the maintenance department and materials worth £22,000 were issued to the production department. Which of the following accounting entries would arise as a result of these transactions? (Tick all that are correct.)

		£	
(a) Debit	Raw materials control	29,000	<input type="checkbox"/>
(b) Debit	Raw materials control	30,000	<input type="checkbox"/>
(c) Debit	Work in progress control	22,000	<input type="checkbox"/>
(d) Debit	Work in progress control	23,000	<input type="checkbox"/>
(e) Debit	Work in progress control	30,000	<input type="checkbox"/>
(f) Debit	Production overhead control	1,000	<input type="checkbox"/>
(g) Credit	Raw materials control	23,000	<input type="checkbox"/>
(h) Credit	Raw materials control	30,000	<input type="checkbox"/>

2.2 Look at the following account and then identify whether statements (a) to (c) are true or false.

Wages control account			
	£		£
Bank	82,500	Work in progress control	52,500
PAYE/NI payable	<u>9,500</u>	Production overhead control	<u>39,500</u>
	<u>92,000</u>		<u>92,000</u>

- | | True | False |
|---|--------------------------|--------------------------|
| (a) Gross wages for the period amounted to £82,500. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) Indirect wages incurred amounted to £39,500. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) Direct wages incurred amounted to £92,000. | <input type="checkbox"/> | <input type="checkbox"/> |

2.3 The production overhead absorption rate is £3 per direct labour hour. During the period 23,000 direct labour hours were worked.

Production overhead control account			
	£		£
Wages control	44,000	Work in progress control	A
Bank	22,000		
Depreciation	8,000		
Raw materials control	<u>2,000</u>		
	<u>76,000</u>		

- (a) In the production overhead control account for the period shown above, the value to be inserted at A is £
- (b) Production overhead for the period was:
- under-absorbed
- over-absorbed
- (c) The value of the under-/over-absorption was £

2.4 Details of the production wages for a company last period are as follows:

	<i>Gross wages</i>	<i>PAYE/NI</i>	
	£000	£000	£000
Direct wages paid	40	10	30
Indirect wages paid	20	6	14

Which of the following accounting entries would be used to record this data? (Tick all that are correct.)

	£000	
(a) Debit Wages control	44	<input type="checkbox"/>
(b) Debit Work in progress	30	<input type="checkbox"/>
(c) Debit Work in progress	40	<input type="checkbox"/>
(d) Debit Production overhead control	14	<input type="checkbox"/>
(e) Debit Production overhead control	20	<input type="checkbox"/>
(f) Debit Wages control	16	<input type="checkbox"/>
(g) Debit Wages control	60	<input type="checkbox"/>
(h) Credit Bank	44	<input type="checkbox"/>
(i) Credit Wages control	60	<input type="checkbox"/>
(j) Credit PAYE/NI payable	16	<input type="checkbox"/>
(k) Credit Bank	60	<input type="checkbox"/>

2.5 Is the following statement *true* or *false*?

If material inventory is valued at standard cost then the material price variance calculation should be based on the materials actually used during the period.

True

False

2.6 Inventories of material W are valued at their standard price of £7 per kilogram. Last period, 900 kg of W were purchased for £5,400, of which 800 kg were issued to production. Which of the following accounting entries would arise as a result of these transactions? (Tick all that apply.)

	£	
(a) Raw material inventory	5,400 debit	<input type="checkbox"/>
(b) Raw material inventory	6,300 debit	<input type="checkbox"/>
(c) Work in progress	4,800 debit	<input type="checkbox"/>
(d) Work in progress	5,600 debit	<input type="checkbox"/>
(e) Material price variance	800 credit	<input type="checkbox"/>
(f) Material price variance	800 debit	<input type="checkbox"/>
(g) Material price variance	900 credit	<input type="checkbox"/>
(h) Material price variance	900 debit	<input type="checkbox"/>

Question 3 Cost bookkeeping

D Ltd operates an integrated accounting system, preparing its annual accounts to 31 March each year. The following balances have been extracted from its trial balance at 31 October, year 3:

	£
Raw material control account	34,789 Dr
Wages control account	5,862 Cr
Production overhead control account	3,674 Cr
Work in progress control account	13,479 Dr

During the first week of November, year 3, the following transactions occurred:

	£
Purchased materials on credit	4,320
Incurred wages	6,450
Issued direct materials to production	2,890
Issued indirect materials to production	560
Incurred production overheads on credit	1,870
Absorbed production overhead cost	3,800
Cost of units completed	12,480
Paid wages	5,900

An analysis of the wages incurred shows that £5,200 is direct wages.

Requirements

(a) The balance shown on the production overhead control account means that the production overhead at 31 October was:

- under-absorbed
- over-absorbed

(b) The raw material control account has been prepared for the first week of November:

Raw material control account			
	£		£
Balance b/d	34,789	Work in progress	B
Payables	A	Production overhead	C
	_____	Balance c/d	35,659
	_____		_____

The values that would be entered as A, B and C would be:

- A £
- B £
- C £

(c) The wages control account has been prepared for the first week of November:

Wages control account			
	£		£
Bank	A	Balance b/d	5,862
		Work in progress	B
		Production overhead	C

The values that would be entered as A, B and C would be:

- A £
- B £
- C £

(d) At the end of the week, the balance brought down on the production overhead control account will be a:

- debit balance
- credit balance

The value of the balance will be £

(e) The work in progress control account has been prepared for the first week of November:

Work in progress control account			
	£		£
Balance b/d	13,479	Finished goods	D
Raw materials	A	Balance c/d	12,889
Wages	B		
Production overhead	C		
	_____		_____

The values shown in the account as A, B, C and D are:

- A £
- B £
- C £
- D £

Solutions to Revision Questions

7

Solution 1

- If you are having trouble identifying the correct entries for each type of transaction, look back to the flowchart of entries at the beginning of this chapter to refresh your memory.
- Take your time and think carefully before selecting the correct option. In many cases, one of the distractors states the correct accounts but the entries are the 'wrong way round'. It is easy to rush into selecting the wrong option.
- An adverse variance is always debited in the relevant variance account. A favourable variance is always credited in the variance account.

1.1 Answer: (A)

Direct costs of production are debited to the work in progress control account.

1.2 Answer: (C)

Indirect costs, including indirect labour, are collected in the debit side of the overhead control account pending their later absorption into work in progress.

1.3 Answer: (A)

The factory overhead is first collected in the overhead control account. It is then absorbed into production costs by debiting the work in progress account using the predetermined overhead absorption rate.

1.4 Answer: (C)

Under-absorbed overhead is transferred from the overhead control account as a debit to the income statement.

1.5 Answer: (B)

Answer (A) is the double entry for the production cost of goods sold. Answer (C) is also the entry for the production cost of goods sold, if a cost of sales account is not used. Answer (D) has entries in the correct accounts but they are reversed.

1.6 Answer: (D)

Materials are issued from stores as either direct materials (to work in progress) or indirect materials (charged to the production overhead control account). The entry for the issue of indirect materials is already shown (£10,000 to production

overhead). Therefore, the £125,000 must be the value of the issue of direct materials to work in progress.

1.7 Answer: (C)

The provision for depreciation of production machinery is a production overhead cost. Therefore, it is debited to the production overhead control account to be accumulated with all other production overheads for the period. At the end of the period the production overhead will be absorbed into work in progress using the predetermined overhead absorption rate.

1.8 Answer: (A)

Overhead absorption rate = $\text{£}320,000/40,000 = \text{£}8$ per direct labour hour

	£
Overhead absorbed = $\text{£}8 \times 41,500$	332,000
Overhead incurred	<u>311,250</u>
Over absorption	<u>20,750</u>

The over absorption is credited to the income statement and debited to the overhead control account.

1.9 Answer: (D)

<i>Price variance:</i>	£
5,000 units should cost each	4.70
But actually cost	<u>4.50</u>
Saving	<u>0.20</u>

$5,000 \times \text{£}0.20 = \text{£}1,000$ (F) – credited to variance account

<i>Usage variance</i>	<i>Material units</i>
2,400 finished units should use	4,800
Actual material usage	<u>4,850</u>
Which is an extra	<u>50</u> units

50 units @ $\text{£}4.70$ (standard price) = $\text{£}235$ (A) – debited to variance account

1.10 Answer: (A)

If the actual price for raw materials is less than the standard price then the raw material price variance is favourable. The variance account would therefore be credited. The corresponding debit entry is made in the raw materials control account.

1.11 Answer: (D)

An adverse variance is debited to the relevant variance account. This leaves us with options (B) or (D). The usage variance is eliminated where it arises, that is, in the work in progress account. Therefore, (D) is the correct answer.

1.12 Answer: (A)

The actual hourly rate is less than standard. Therefore, the rate variance is favourable and is credited to the variance account.

1.13 Answer: (B)

£25,185 + £5,440 = £30,625. The only direct costs are the wages paid to direct workers for ordinary time, plus the basic pay for overtime. Overtime premium and shift allowances are usually treated as overheads. However, if and when the overtime and shiftwork are incurred specifically for a particular cost unit, they are classified as direct costs of that cost unit. Sick pay is treated as an overhead and is therefore classified as an indirect cost.

1.14 Answer: (B)

Overtime premium is usually treated as an overhead cost if the overtime cannot be specifically indentified with a particular cost unit.



Solution 2

2.1 The correct entries are:

- (b) The purchased materials are debited in the raw materials control account.
- (c) The direct materials are issued to the production department (work in progress).
- (f) Materials issued to maintenance are indirect materials, debited to the production overhead control account.
- (g) The total amount of materials issued is credited in the materials control account.

- 2.2**
- (a) *False*. Gross wages are £92,000.
 - (b) *True*. Indirect wages are transferred to the production overhead control account.
 - (c) *False*. Direct wages are £52,500: the amount transferred to work in progress.

- 2.3**
- (a) The value to be inserted at A is **£69,000** (£3 × 23,000 hours)
 - (b) Production overhead for the period was *under-absorbed* (see workings in (c)).

	£
(c) Overhead incurred	76,000
Overhead absorbed into production	<u>69,000</u>
Overhead under-absorbed	<u>7,000</u>

2.4 Remember that the wages control account acts as a collecting place for the gross wages before they are transferred to work in progress or to production overhead control, according to whether they are direct wages or indirect wages. The gross wages are made up of two parts: the net wages that are paid from the bank, plus the PAYE/NI deductions. The correct entries are:

- (a) and (h) The net wages paid are ‘collected’ in the wages control account and credited to the bank.
- (f) and (j) The deductions are ‘collected’ in the wages control account and credited to the PAYE/NI payable.

The total gross wages have now been debited to the wages control account.

- (c), (e) and (i) The gross wages are transferred to work in progress or to production overhead control according to whether they are direct or indirect wages.

2.5 *False*. When material inventory is valued at standard cost, the material price variance is based on the materials purchased.

- 2.6 (b) Standard price of purchases is debited to the inventory account ($900 \times \text{£}7$).
 (d) Standard price of material issues is debited to work in progress ($800 \times \text{£}7$).
 (g) Favourable material price variance is credited to variance account:

	£	
900 kg purchased should cost	6,300	
($\times \text{£}7$)		
But did cost	<u>5,400</u>	
Material price variance	<u>900</u>	favourable



Solution 3

- Use the flowchart of entries at the beginning of this chapter if you need help with remembering the correct double entry for each item.
- (a) The credit balance shown on the production overhead control account means that there was *over-absorption* of production overhead at 31 October. A debit balance would have indicated an under-absorption of production overheads at that date.
- (b) A £4,320
 B £2,890
 C £560
- (c) A £5,900
 B £5,200
 C £1,250

Workings:

	£
Wages incurred	6,450
Direct wages to WIP	<u>5,200</u>
Indirect wages to production overhead	<u>1,250</u>

- (d) At the end of the week, the balance on the production overhead control account will be a *credit* balance of **£3,794**.

Working:

Production overhead control account			
	£		£
Raw materials	560	Balance b/d	3,674
Wages	1,250	Work in progress*	3,800
Payables	1,870		
Balance c/d	<u>3,794</u>		
	<u>7,474</u>		<u>7,474</u>

* Production overhead absorbed is transferred to work in progress. The over-absorbed balance is now £3,794, which is carried down to the next week.

- (e) A £2,890
 B £5,200
 C £3,800
 D £12,480.