

F5 December 2010 question 1

- 1 Carad Co is an electronics company which makes two types of televisions – plasma screen TVs and LCD TVs. It operates within a highly competitive market and is constantly under pressure to reduce prices. Carad Co operates a standard costing system and performs a detailed variance analysis of both products on a monthly basis. Extracts from the management information for the month of November are shown below:

		Note
Total number of units made and sold	1,400	1
Material price variance	\$28,000 A	2
Total labour variance	\$6,050 A	3

Notes

- (1) The budgeted total sales volume for TVs was 1,180 units, consisting of an equal mix of plasma screen TVs and LCD screen TVs. Actual sales volume was 750 plasma TVs and 650 LCD TVs. Standard sales prices are \$350 per unit for the plasma TVs and \$300 per unit for the LCD TVs. The actual sales prices achieved during November were \$330 per unit for plasma TVs and \$290 per unit for LCD TVs. The standard contributions for plasma TVs and LCD TVs are \$190 and \$180 per unit respectively.
- (2) The sole reason for this variance was an increase in the purchase price of one of its key components, X. Each plasma TV made and each LCD TV made requires one unit of component X, for which Carad Co's standard cost is \$60 per unit. Due to a shortage of components in the market place, the market price for November went up to \$85 per unit for X. Carad Co actually paid \$80 per unit for it.
- (3) Each plasma TV uses 2 standard hours of labour and each LCD TV uses 1.5 standard hours of labour. The standard cost for labour is \$14 per hour and this also reflects the actual cost per labour hour for the company's permanent staff in November. However, because of the increase in sales and production volumes in November, the company also had to use additional temporary labour at the higher cost of \$18 per hour. The total capacity of Carad's permanent workforce is 2,200 hours production per month, assuming full efficiency. In the month of November, the permanent workforce were wholly efficient, taking exactly 2 hours to complete each plasma TV and exactly 1.5 hours to produce each LCD TV. The total labour variance therefore relates solely to the temporary workers, who took twice as long as the permanent workers to complete their production.

Required:

- (a) Calculate the following for the month of November, showing all workings clearly:
 - (i) The sales price variance and sales volume contribution variance; (6 marks)
 - (ii) The material price planning variance and material price operational variance; (2 marks)
 - (iii) The labour rate variance and the labour efficiency variance. (7 marks)
 - (b) Explain the reasons why Carad Co would be interested in the material price planning variance and the material price operational variance. (5 marks)
- (20 marks)**

1 (a) (i) Sales price variance and sales volume variance

Sales price variance = (actual price – standard price) x actual volume

	Actual price	Standard price	Difference	Actual volume	Sales price Variance
	\$	\$	\$		\$
Plasma TVs	330	350	–20	750	15,000 A
LCD TVs	290	300	–10	650	6,500 A
					<u>21,500 A</u>

Sales volume contribution variance = (actual sales volume – budgeted sales volume) x standard margin

	Actual sales volume	Budgeted sales volume	Difference	Standard margin	Sales volume variance
				\$	\$
Plasma TVs	750	590	160	190	30,400 F
LCD TVs	650	590	60	180	10,800 F
	<u>1,400</u>	<u>1,180</u>			<u>41,200 F</u>

(ii) Material price planning and purchasing operational variances

Material planning variance = (original target price – general market price at time of purchase) x quantity purchased

(\$60 – \$85) x 1,400 = \$35,000 A.

Material price operational variance = (general market price at time of purchase – actual price paid) x quantity purchased.

(\$85 – \$80) x 1,400 = \$7,000 F.

(iii) Labour rate and labour efficiency variances

Labour rate variance = (standard labour rate per hour – actual labour rate per hour) x actual hours worked.

Actual hours worked by temporary workers:

Total hours needed if staff were fully efficient = (750 x 2) + (650 x 1.5) = 2,475.

Permanent staff provide 2,200 hours therefore excess = 2,475 – 2,200 = 275.

However, temporary workers take twice as long, therefore hours worked = 275 x 2 = 550

Labour rate variance relates solely to temporary workers, therefore ignore permanent staff in the calculation.

Labour rate variance = (\$14 – \$18) x 550 = \$2,200 A.

Labour efficiency variance = (standard labour hours for actual production – actual labour hours worked) x standard rate.

(275 – 550) x \$14 = \$3,850 A.

(b) Explanation of planning and operational variances

Before the material price planning and operational variances were calculated, the only information available as regards material purchasing was that there was an adverse material price variance of \$28,000. The purchasing department will be assessed on the basis of this variance, yet, on its own, it is not a reliable indicator of the purchasing department's efficiency. The reason it is not a reliable indicator is because market conditions can change, leading to an increase in price, and this change in market conditions is not within the control of the purchasing department.

By analysing the materials price variance further and breaking it down into its two components – planning and operational – the variance actually becomes a more useful assessment tool. The planning variance represents the uncontrollable element and the operational variance represents the controllable element.

The planning variance is a really useful for providing feedback on just how skilled management are in estimating future prices. This can be very easy in some businesses and very difficult in others.

The operational variance is more meaningful in that it measures the purchasing department's efficiency given the market conditions that prevailed at the time. It therefore ignores factors that the purchasing department cannot control, which in turn, stops staff from becoming demotivated.

		<i>Marks</i>
1	(a) (i) Sales price variance	3
	Sales volume variance	3
		<u>6</u>
	(ii) Purchasing planning variance	1
	Purchasing efficiency variance	1
		<u>2</u>
	(iii) Actual hours worked	3
	Labour rate variance	2
	Labour efficiency variance	2
		<u>7</u>
	(b) Each valid reason	1
		<u>5</u>
		<u>20</u>