We were given the following information in the practice questions.

Gym mate manufactures and sells fitness clothing. It uses an absorption costing system and charges overheads to product using direct labour hours. The following details relate to the last year.

	Budget	Actual
Overhead costs ($)	360,000	426,000
Number of units produced	80,000	100,000
Labour hours used	120,000	140,000

The predetermined overhead absorption rate per labour hour is:
This is easy to do, it all comes from the budget information.

£360,000/120,000 hours = £3 per hour.

£360000/80,000 units =£4.50 per unit.

Note: 120 000 hrs / 80 000 units = 1·5 hrs / unit

The over/under absorbed overhead cost would be:
This is a bit misleading as a question because there is a price variance and (if you are doing absorption costing only) an overall overhead absorption variance that can be broken in to two parts.

1. Price variance. This applies to both Absorption and Marginal costing.

Budgeted to pay €360 000
Actually paid €426 000
€66 000 (A)

We spent more than we planned = bad news.

2. Overhead variance. This applies only to Absorption costing.

We saw above that we absorb at €3/hour which means €4.50/unit.

We sell units, not hours, so more units is good.

Budgeted Units 80 000 units
Actual units 100 000 units
20 000 more
€4.50 per unit
€90 000 F.

We are going to get an extra €90k when we sell the units. Anything we don't need to pay for overheads = profit

We can break this down into two elements.

Capacity
Budget Hours 120 000 hrs
Actual Hours 140 000 hrs
20 000 more
€3/hr
€60 000 F

More hours = good news here, but in reality it could be bad news. If we took longer to make the same number of units that would be inefficient. It is only good news if we make more units.

Efficiency
Actual units @ Budget hrs
Actual hrs
i.e.
A×B 100 000 × 1·5 = 150 000 hrs
A 140 000 hrs
10 000 fewer
€3/hr
€30,000 F

Note that fewer hours is good news. We did the work in less time than it should have taken.

LET'S GET TECHNICAL

Gareth John explains fixed overhead variances

Variances play an important role in appraising the financial performance of a business. Variances look at the difference between the results a business expects and the results that they actually achieve. Variances can be calculated for revenue, material costs, labour costs and variable overheads, but the calculations that students often find the most challenging to understand is those for fixed overhead variances in a business.

The fixed overhead variances look at whether amounts spent by the business on fixed overheads (such as factory rent) were more or less than expected.

For the purposes of this article let's use the following figures:

	Budget	Actual
Fixed overhead (factory rent)	£100,000	£120,000
Production volume	50,000	55,000
Production hours	200,000	215,000

Fixed overhead variances under marginal costing

If the company is using marginal costing there will only be one fixed overhead variance; the fixed overhead expenditure variance, which is simply the difference between the budgeted and actual fixed overhead figures. It can be calculated as:

Budgeted fixed overhead	£100,000
Actual fixed overhead	£120,000
Fixed overhead expenditure variance	**£20,000 (A)**

This variance is adverse as the amount actually spent on fixed overheads was greater than expected, which will reduce the profit made by the business. Perhaps this was caused by our landlord increasing our rent unexpectedly.

Fixed overhead variances under absorption costing

If the company is using absorption costing then the fixed overhead variance can be subdivided to give more information about what changed compared to the original budget.

Fixed overhead expenditure variance: This is the budgeted fixed overhead compared to the actual fixed overhead and is calculated in the same way as for marginal costing above. This variance would still be £20,000 (A).

Fixed overhead volume variance: This looks at how much output we got from the factory that we are renting and takes the difference between the budgeted and actual production volume figures and values this at the standard fixed overhead absorption rate (FOAR). Remember that this standard FOAR will be based on the budgeted figures, in this case £100,000/50,000units = £2 per unit.

Budgeted production volume	50,000 units
Actual production volume	55,000 units
Variance (in units)	5,000 (F)
Valued at standard FOAR per unit	£2
Variance (£)	£10,000 (F)

In this case the variance is favourable as we managed to produce more units than budgeted, so we got more out of the factory that we are renting which should improve profits.

Explaining the fixed overhead volume variance

The fixed overhead volume variance can then be further broken down to look at the reasons why the actual volume of production achieved was different from the budgeted volume. In our example we managed to produce 5,000 units more than we budgeted (which was why the volume variance was favourable). This extra volume could have been caused by two factors; staff might have worked more quickly than expected, or staff might have worked more hours than expected.

Fixed overhead efficiency variance: This looks at how quickly the workforce made units of production by comparing the time that actual production should have taken to the time it actually took. Faster staff will lead to a greater volume of production. One thing we need to identify is how fast we expected staff to work, or the standard hours per unit, which is 200,000 hours/50,000 units = 4 hours per unit from the budget.

The calculation can then be done as follows:

Actual production (units)	
– should take (at standard hours per unit)	
55,000 x 4 hours per unit	220,000 hours
– did take	215,000 hours
Variance in hours	5,000 (F)
Valued at the standard FOAR per hour	£0.50
Variance (£)	£2,500 (F)

Notice that because the variance is initially measured in hours we need to value it at a standard FOAR per hour, which is £100,000/200,000 = £0.50 per hour.

This variance is favourable as staff were faster than the expected 4 hours per unit, which means they would produce a higher volume of output in a given period of time.

Fixed overhead capacity variance: This looks at the number of hours staff worked compared to budget. More hours worked will lead to a greater capacity to produce units.

Budgeted hours worked	200,000 hours
Actual hours worked	215,000 hours
Variance (in hours)	15,000 (F)
Valued at the fixed OAR per hour	£0.50
Variance (£)	£7,500 (F)

This variance is favourable as staff worked 15,000 hours more than budgeted in which time they could have produced a higher volume of output than expected.

You can check that your efficiency and capacity figures make sense as they should add back to the volume variance: £3,500 (F) + £7,500 (F) = £10,000 (F). This shows that staff worked faster than expected and also worked more hours than expected, both of which led to the extra 5,000 units of volume.

Here's a chance for you to practise the calculations

Budgeted fixed overheads are £50,000. Budgeted output is 10,000 units taking 20,000 labour hours. Actual output is 8,000 units which took 17,000 labour hours. Actual fixed overheads were £52,000.

What are the fixed overhead expenditure, volume, efficiency and capacity variances?

Once you have finished you can watch me go through my answers at www.firstintuition.co.uk/category/aat PQ

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