

Part I

Solutions

An introduction to cost terms and concepts

Solutions to Chapter 2 questions

(1) (a); (2) (d); (3) (e); (4) (f); (5) (i); (6) (b); (7) (h).

Solution IM 2.1

(i)	Direct materials 9	(ii)	Direct labour 16	(iii)	Direct expenses 10
(iv)	Indirect production overhead 1 6 8 18 19	(v)	Research and development costs 20	(vi)	Selling and distribution costs 7 11 12 13 17
(vii)	Administration costs 2 3 4 14 15	(viii)	Finance costs 5		

Solution IM 2.2

(a) Variable cost per running hour of Machine XR1

Solution IM 2.3

	(£)
Fixed cost	25
Fixed cost " " " " " " " " " "	18.182
	(£)
Variable machine cost (4 hours × £25)	100
X-ray plates	40
Total variable cost	140
Fixed machine cost (4 hours × £18.182)	72.73
Total cost of a scan	212.73
Total cost of a satisfactory scan (£212.73/0.9)	236.37

(b) It is assumed that fixed costs will remain unchanged and also that they are not relevant to the decision. The relevant costs are the incremental costs of an additional scan:

Machine XR1:	(£)
Variable cost per scan	140
Variable cost per satisfactory scan (£140/0.9)	155.56

<i>Machine XR50:</i>	(£)
Variable machine cost per scan (£64,000/2,000hours × 1.8hours)	57.60
X-ray plates	<u>55.00</u>
Variable cost per scan	<u>112.60</u>
Variable cost per satisfactory scan (£112.60/0.94)	119.79

The relevant costs per satisfactory scan are cheaper on Machine XR50 and therefore brain scans should be undertaken on this machine.

Solution IM 2.4

(a) *Standard cost sheet (per unit)*

	(£)	(£)
Direct materials 40m ² at £5.30 per m ²		212
Direct wages:		
Bonding dept 48 hours at £12.50 per hour	600	
Finishing dept 30 hours at £9.50 per hour	<u>285</u>	
		<u>885</u>
(i) Primecost		1,097
Variable overhead: ^a		
Bonding dept 48 hours at £0.75 per hour	36	
Finishing dept 30 hours at £0.50 per hour	<u>15</u>	
		<u>51</u>
(ii) Variable production cost		1,148
Fixed production overhead ^b		<u>40</u>
(iii) Total production cost		1,188
Selling and distribution cost ^c	20	
Administration cost ^c	<u>10</u>	
		<u>30</u>
(iv) Total cost		<u>1,218</u>

Notes

^aVariable overhead rates: Bonding = $\frac{£37,5000}{500,000 \text{ hours}} = £0.75$

Finishing = $\frac{£150,000}{300,000 \text{ units}} = £0.50$

^bFixed production overhead rate per unit of output = $\frac{£392,000}{9,800 \text{ units}} = £40$

The fixed production overhead rate per unit of output has been calculated because there appears to be only one product produced. Alternatively, a fixed production hourly overhead rate can be calculated and charged to the product on the basis of the number of hours which the product spends in each department.

^cSelling and production cost per unit of output = $\frac{£196,000}{9,800 \text{ units}} = £20$

Administration cost per unit of output = $\frac{£98,000}{9,800 \text{ units}} = £10$

(b) Selling price per unit £1,218 × $\frac{100}{85} = \underline{1,433}$