

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

	(£)
	25
Fixed cost	(£27 500/1100 hours)=
	(£20 000/1100 hours) =
	18.182

Cost of brain scan on Machine XRI:	(£)
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
Machine XR50:	(£)

Variable machine cost per scan (£64 000/2000 hours × 1.8 hours)	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 40 m 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)	Prime cost		1097
	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		1148
	Fixed production overhead ^b		<u>40</u>
(iii)	Total production cost		1188
	Selling and distribution cost ^c	20	
	Administration cost ^c	<u>10</u>	
			<u>30</u>
(iv)	Total cost		<u>1218</u>

Notes

$$^a \text{ Variable overhead rates: Bonding} = \frac{\text{£}375\,000}{500\,000 \text{ hours}} = \text{£}0.75$$

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

$$^b \text{ Fixed production overhead rate per unit of output} = \frac{\text{£}392\,000}{9800 \text{ units}} = \text{£}40$$

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.

$$^c \text{ Selling and production cost per unit of output} = \frac{\text{£}196\,000}{9800 \text{ units}} = \text{£}20$$

$$\text{Administration cost per unit of output} = \frac{\text{£}98\,000}{9800 \text{ units}} = \text{£}10$$

$$(b) \text{ Selling price per unit } \text{£}1218 \times \frac{100}{85} = \underline{\underline{1433}}$$