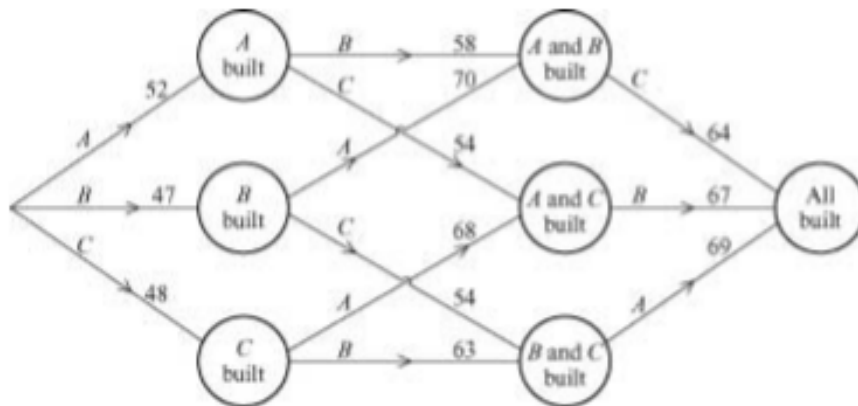


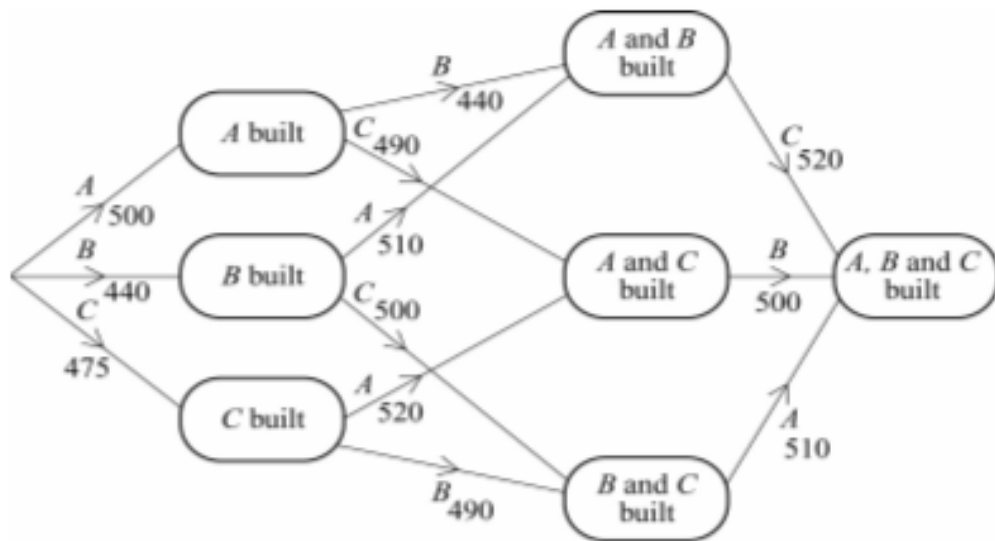
Decision 2 Dynamic Programming Answers

2(a)



	Network diagram	M1 A1	2	SCA Correct																																																																																
(b)	Clear attempt to use Dynamic Programming			Complete enumeration M0																																																																																
	Working backwards through network			Forwards through network																																																																																
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	The machine should therefore be built in the order <i>C</i> then <i>A</i> then <i>B</i>	B1		Correct max identified and rest correct <i>BA</i> 117*; <i>CA</i> 116*; <i>CB</i> 111*																																																																																
	Max profit = £183000	B1	2	Exactly 3 totals considered																																																																																
	Total		9	Considering previous max to combine																																																																																
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				condone 183																																																																																

5(a) (May use correct network instead of table but **must** work backwards through network)



Month	Already Built	Machine Built	Cost (£)	Total Cost (* = min)
3	A and B	C	520	520*
	A and C	B	500	500*
	B and C	A	510	510*
2	A	B	440	440 + 520 = 960*
		C	500	490 + 500 = 990
	B	A	510	510 + 520 = 1030
		C	500	500 + 510 = 1010*
	C	A	520	520 + 500 = 1020
		B	490	490 + 510 = 1000*
1	-	A	500	500 + 960 = 1460
	-	B	440	440 + 1010 = 1450*
	-	C	475	475 + 1000 = 1475

Order is *BCA*

(b) Choosing other values at stage 2
New totals at stage 1

Maximum profit *CAB*

B1

Month 3 costs correct

M1

6 values in month 2 (4 correct)

A1

All correct

M1

3 values using minimum from month 2

A1

All correct and asterisks correct

B1

6

B1✓

990*, 1030*, 1020*

M1 A1

500 + 990 = 1490

440 + 1030 = 1470

475 + 1020 = 1495*

B1

4

Total

10