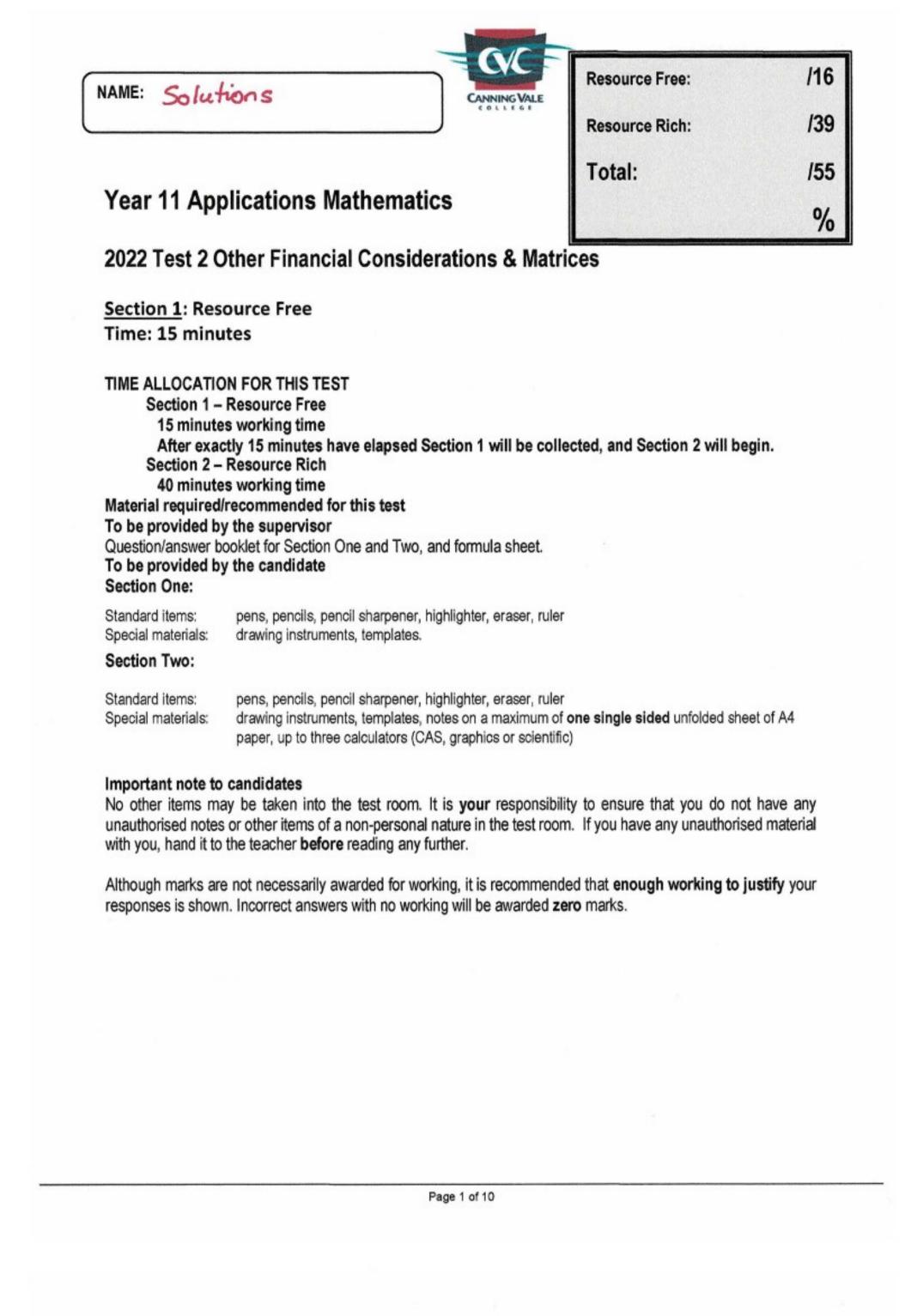
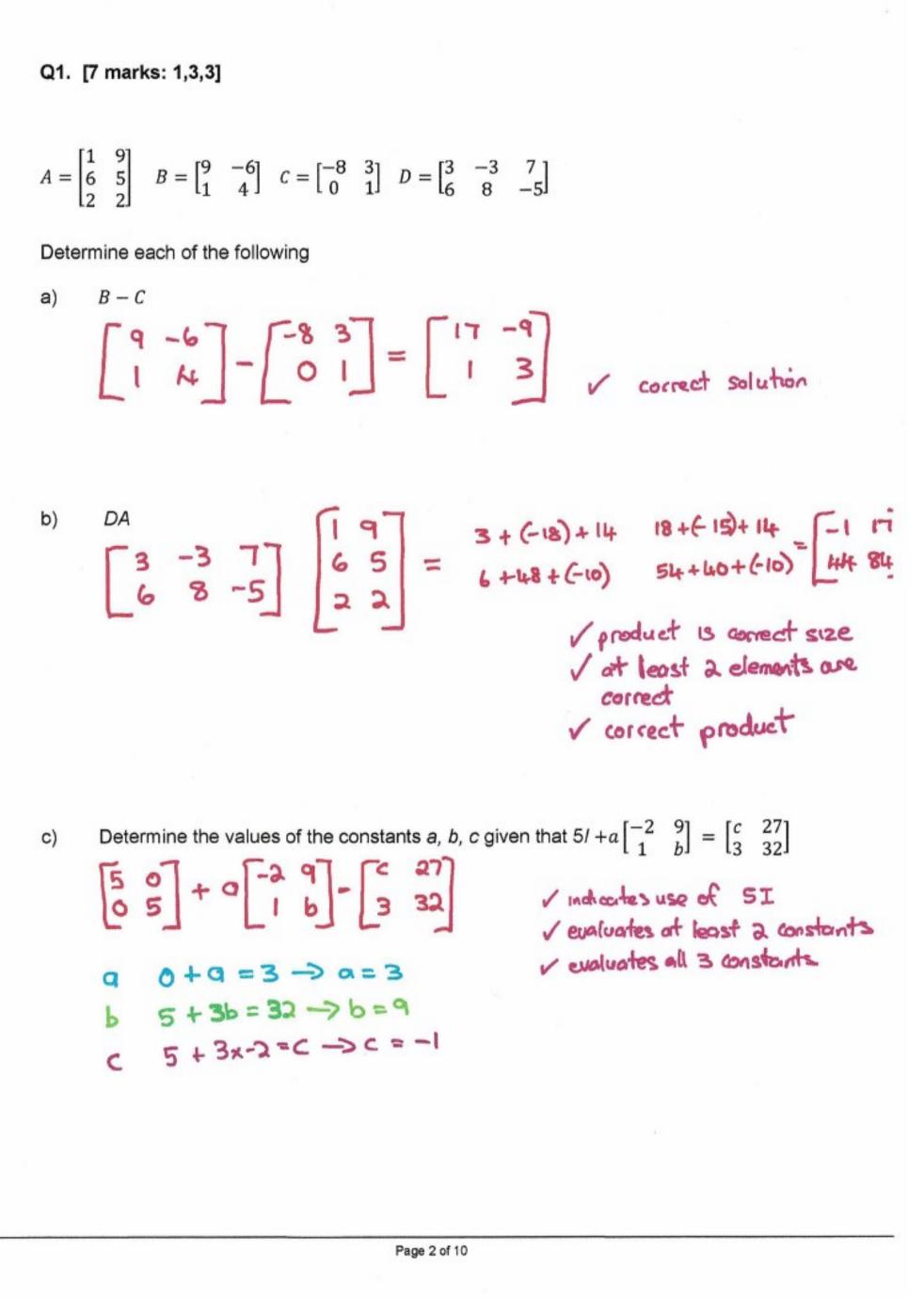
2022 Yr 11 Apps Test...





Q2. [6 marks: 1,2,3]

a)

A system of one-way and two-way paths connects three locations A, B, and C. There may be more than one path between any two locations. The table below show the number of ways to travel between these locations using a single path.

		То		
		A	В	C
	A	0	1	1
From	В	0	0	2
	С	2	2	0

Is the path between A and B one-way or two-way? Justify your answer. One way. There is "O" path ways from B to A

 b) Complete the network below to show the information in the table. 	
/ correct arcs	
B correct directions	
c) Calculate and list the number of ways to travel from B to A using 2 paths.	
N ² = A BC B 0 0 2 [0 0 2] /at least 2 correct element c 2 2 0 [2 2 0] / correct product / correct product	k
$M^2 = \begin{bmatrix} 2 & 2 & 2 \\ 4 & H & 0 \\ 0 & 2 & 6 \end{bmatrix}$	
4 paths from B to A	
correct solution	
Page 3 of 10	
Q3. [3 marks: 1,2]	
Ana is traveling to Brazil for a holiday.	
a) On the day she leaves,1 Brazilian Real equals 0.36 Australian Dollars. If she exchanges \$1000 Australian dollars, how much does she receive in Real? Give your answer to the nearest Real.	
1000 = 2777	
0.36 = 2778 Brozilian Real / correct solution	
b) On the day she returns, 1 Brazilian Real equals 0.39 Australian Dollar. If she has 1000 Brazilian Real left, how many Australian dollars has she spent while on holiday?	
$1000 \times 0.39 = 390 / converts to Aus \$ \$1000 - \$390 = \$610 / calculates how much spent in	
Ana spent \$610 while on holiday Aus \$	
End of Section 1	
Page 4 of 10	
NAME: Solutions	
Section 2: Resource Rich Time: 40 minutes	
Q4. [3 marks]	
The pay rates for full and part time 17-year old employees are shown in this table:	
Base Pay Rate Monday to Friday 7p.m midnight Monday to Friday Midnight - 7.a.m. Saturday Sunday \$10.93/hr \$10.93/hr + \$10.93/hr + \$3.09/hr or \$13.66/hr \$19.13/hr	
\$2.06/hr or part of part of an hour an hour	
Meals and other breaks are unpaid. A 17-year old was asked to cover for an absent staff member from 3 pm to	
11 pm one Thursday, taking a meal break from 7.15 pm to 8 pm. How much did they	
By to Tym: $10.93 \times 14 = 43.72 V Bose rate calc Tym to 7.15: $0.25 \times (10.93 + 2.06) = 3.25$ V Overtime rate calc Bym to lipm: $3 \times (10.93 + 2.06) = 38.97$ V Overtime rate calc	
Spm to lipm: 3x (10:93+2.06) = 35.94 / Total pay Total pay \$85.94 / Total pay	
Q5. [4 marks]	
Q5. [4 marks] A supermarket has three options for purchasing a brand of cereal:	
A supermarket has three options for purchasing a brand of cereal: Standard \$2.49 for 220g Economy \$5.00 for 725g	
A supermarket has three options for purchasing a brand of cereal: Standard \$2.49 for 220g	
A supermarket has three options for purchasing a brand of cereal: Standard \$2.49 for 220g Economy \$5.00 for 725g Supersize \$11.50 for 2kg Retail laws require the supermarket to display the price per 100g for each size cereal, to the nearest cent.	
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A supermarket has three options for purchasing a brand of cereal: Standard \$2.49 for 220g Economy \$5.00 for 725g Supersize \$11.50 for 2kg Retail laws require the supermarket to display the price per 100g for each size cereal, to the nearest cent. Calculate the cost of each for 100g and order the cereals in order of value, best value first.	29

Supersize, Economy, Standard

andard

Vorrect listing

Q6. [7 marks: 3,4]

The JobSeeker Payment is a government payment to help individuals aged 22 years or more who are looking for work. The maximum fortnightly payment for a single person with no children is \$642.70.

JobSeeker recipients can earn up to \$150 per fortnight (before tax) before their payment is affected. Income over \$150 and up to \$256 per fortnight reduces the fortnightly payment by 50 cents in the dollar and income above \$256 per fortnight reduces the payment by 60 cents in the dollar.

a)			
	A person who earns \$120 p	to the following: per week.	
	\$ 120/wk = \$ 240/ 60	tright v fort	night pay
	reduction = (200-150	o)xo.s V redu	iction
	= \$4.5		ect amount
	642.70 - 45 = \$5	11.10	
b)	A person who works part-til week.	me in a job paying \$22.75	5/hr for 12 hours each
	22.75 × 12 × 2 = \$5		tright pay
	(SH6-256) × 0.6 :		duction A
	(256-150) × 0.5	= 2 53 V re	eduction B
	642.70 - 174-53	= S MIS- 10 V 0	arrees amount
a ha na a shekarar a		Page 6 of 10	
Q7. [6 ma	arks: 2,2,2]		
	ding is becoming a bit worrying		ke a list of her regular
expenses i	n order to manage her finance	s better.	
a)	Calculate how much she sp	ent on her bills last year.	
	29 135 for the year	Mortgage	\$1600/month
3		Electricity	\$250 every 2 months
		Electricity Gym fees	\$250 every 2 months \$175/month
~	poyments calculated to annual rate	Gym fees Home insurance Gas	\$175/month \$935/year \$140 every 2 months
~		Gym fees Home insurance Gas Water Vehicle registration	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year
~	poyments calculated to annual rate	Gym fees Home insurance Gas Water	\$175/month \$935/year \$140 every 2 months \$230 every 3 months
\$ \$	poyments calculated to annual rate correct solution	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week
~	poyments calculated to annual rate	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week
\$ \$	How much should Ava alloc Round your answer to the n	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet cate each week in order to hearest \$10.	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week
✓ ✓	How much should Ava alloc Round your answer to the n	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet cate each week in order to hearest \$10.	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week
✓ ✓	How much should Ava alloc Round your answer to the n	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week
✓ ✓	How much should Ava alloc Round your answer to the n	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet cate each week in order to hearest \$10.	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week
✓ ✓	How much should Ava alloc Round your answer to the n	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet cate each week in order to hearest \$10.	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week
✓ ✓	How much should Ava alloc Round your answer to the n	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet cate each week in order to hearest \$10.	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week
✓ ✓	How much should Ava alloc Round your answer to the n	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet ate each week in order to hearest \$10. Greet or Greet or	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week cover her expenses? cover her expenses? cover her expenses?
b)	How much should Ava alloc Round your answer to the n 29 135 = 1560 · 288 52 \$560 / week What percentage of her exp tortgoge 19 200	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet cate each week in order to hearest \$10. Grrect or concert or conco	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week cover her expenses? \$1/52 Sure - nearest \$10 \$10 \$10 \$1750/year
b)	How much should Ava alloc Round your answer to the n 29 135 = 1560 · 288 52 \$560 / week What percentage of her exp tortgoge 19 200 and ress 2 100 ass	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet cate each week in order to hearest \$10. Correct or Correct or Senses are for discretioned 25 875	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week cover her expenses? cover her expenses? cover her expenses?
b)	Poyments calculated to annual rate correct solution How much should Ava alloc Round your answer to the n 29 135 = 1560 · 288 52 \$560 / week Solution What percentage of her exp lot goge 19 200 ign Fees 2 100 ign Fees 2 100 ign Fees 2 50	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet cate each week in order to hearest \$10. Greet on Correct on Fixed penses are for discretional 25 875 29 135	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week cover her expenses? cover her expen
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b)	How much should Ava alloc Round your answer to the n 29 135 = 1560 · 288 52 \$560 / week What percentage of her exp tortgoge 19 200 ign Fees 2 100 ign Fees 2	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet cate each week in order to hearest \$10. Greet or Greet or Fried penses are for discretional 25 875 29 135 Solution Solutio	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week cover her expenses? cover her expen
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b)	How much should Ava alloc Round your answer to the n 29 135 = 1560 · 288 52 \$560 / week What percentage of her exp tortgoge 19 200 ign Fees 2 100 ign Fees 2	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet cate each week in order to hearest \$10. Greet or Greet or Fried penses are for discretional 25 875 29 135 Solution Solutio	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week cover her expenses? cover her expen
b)	How much should Ava alloc Round your answer to the n 29 135 = 1560 · 288 52 \$560 / week What percentage of her exp tortgoge 19 200 ign Fees 2 100 ign Fees 2	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet ate each week in order to hearest \$10. Correct on Correct on Corre	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week cover her expenses? cover her expen
b)	How much should Ava alloc Round your answer to the n 29 135 = 1560 · 288 52 \$560 / week What percentage of her exp tortgoge 19 200 ign Fees 2 100 ign Fees 2	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet ate each week in order to hearest \$10. Correct on Correct on Corre	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week cover her expenses? cover her expen
b)	How much should Ava alloc Round your answer to the n 29 135 = 1560 · 288 52 \$560 / week What percentage of her exp tortgoge 19 200 ign Fees 2 100 ign Fees 2	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet ate each week in order to hearest \$10. Correct on Correct on Corre	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week cover her expenses? cover her expen
b)	How much should Ava alloc Round your answer to the n 29 135 = 1560 · 288 52 \$560 / week What percentage of her exp tortgoge 19 200 ign Fees 2 100 ign Fees 2	Gym fees Home insurance Gas Water Vehicle registration Council rates Telephone/Internet cate each week in order to hearest \$10. Correct on Correct on Correct on Senses are for discretional Correct on Correct	\$175/month \$935/year \$140 every 2 months \$230 every 3 months \$850/year \$1750/year \$20/week cover her expenses? cover her expen

a) Calculate the earnings per share for both companies. WA Offshore: 0.252 = 0.30 Shalegas: 6.048 2 = 0.30 0.25 = 1.2 = \$1.12/share

represented 25% of after tax earnings.

earnings of \$6.048 million.

VVA Offshore:

Shalegas:

\$1.20/share // indicates calculation for each company // correct amount with units Br each company

Market price of \$15.50 a share; dividend of 30 cents per share which

Market price of \$8.96; total share issue of 5.4 million, annual after tax

b) Determine the price to earnings ratio for both companies. WA offshore: Shalegas : P/E = 15.60 1.20 P/E = 8.96 = 13 = 8 // Appropriate calculation for each company // correct ratio Sor each company. c) How can the P/E ratios be used by an investor to compare these companies? Comparing the PIE ratios shows that Shalegas is the company to invest in. shalegas - every \$8 of share value earns the investor \$1 of dividend. WA Offshore - every \$13 of share value earns the investor \$1 of dividend. ✓ Identifies Shalegas as the bast company to invest in V Explanation of PIE ratios

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Q9. [9 marks: 1,1,2,2,3] The number of hours of labour required by each worker A, B and C during the manufacture

of three products P, Q, and R is shown in the Matrix M below:

	Ρ	Q	R
Α	[3	2	2]
A B	[3 0 4	4	2 3 2
С	4	1	2

a) Explain the significance of the m21 in matrix M. No labour required for worker B on product P. V Explanation

b) Due to differing experience, workers A, B and C are paid \$16, \$20 and \$22 per hour respectively. Express this information in the row matrix N that is consistent with the information in matrix M.
 N = [16 20 22] Correct solution

c) Determine the product of matrices M and N, in whatever order is possible, and explain what the resulting matrix S shows.

36 134 136	
produce each	product.
	produce coch

d) A standard production run consists of the manufacture of 3, 1 and 2 product P, Q and R respectively. Write down a suitable matrix T so that the product ST will show the total labour cost for a standard production run and determine this total labour cost. T = 37 $ST = \begin{bmatrix} 136 & 134 & 136 \end{bmatrix} \begin{bmatrix} 3\\1\\2 \end{bmatrix}$ = [814] = Solut to tal labour cost for a ✓ States motions T ✓ Correct product standard production run During a standard production run, worker B is not available to maintain e) production, worker A takes on an extra four hours for product Q and worker C takes on an extra three hours for product R. Determine, with justification, the effect this has on the total labour cost for a standard production run. 5627 [3] - [810] \$k cheaper (less)

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[16 22] [4 1 5		the cheaper though
 ✓ Adapts matrix ✓ Adapts matrix ✓ States change 	M	