

- 3 Cariokae Ltd is a specialist manufacturer of steel rods for use in the construction industry. The company has three different machines each of which is capable of producing the rods. When a company receives a new order it has to decide which of the three machines to use.

Data regarding the machines is as follows:

MACHINE	A	B	C
Set-up costs per order	\$200	\$330	\$600
Number of rods produced per machine-hour	100	150	200
Number of machine operators	4	5	6

Variable factory overhead for each machine is \$12 per direct labour hour.

Direct material needed to produce 100 rods is \$300, whichever machine is selected.

Machine operators are paid \$10.50 per hour.

REQUIRED

- (a) Order P235 has been received for 3000 rods.

- (i) Calculate the costs of producing order P235 on **each** machine.

	MACHINE		
DATA FOR ORDER P235	A	B	C
Order quantity			
Production rates per hour			
Operating hours			
Number of operators			
Direct labour hours worked			
COSTS FOR P235	\$	\$	\$
Direct materials			
Direct labour			
Variable overheads			
Set up costs			
Total costs			

(ii) Advise the production manager which machine to use for order P235 to minimise costs.

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..... [1]

It has been suggested that by adding **one** additional operator to **each** machine,

- 1 there would be an efficiency saving of 10% on direct materials and
- 2 the rate of production would increase by 20%.

REQUIRED

(b) Assuming that the additional operator is employed on **each** machine, re-calculate your answer for order P235.

Data for order P235	MACHINE		
	A	B	C
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[12]

- (c) (i) State how your advice to the production manager should differ if the additional operator is employed.

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..... [2]

- (ii) State whether the additional operator should be retained for each machine.

Explain your reasoning.

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