3 Paul owns two car wash businesses, called City Centre Car Wash and Suburban Car Wash.

City Centre Car Wash has the following monthly costs:

Per car	$
Detergent	1.00
Electricity	0.50
Water costs	0.05
Wage costs	1.25

Per month	$
Insurance of site	800
Lease of equipment	2040
Manager's salary	1000

Additional information:

Both car wash businesses are open for 400 hours every month.

The cars are washed one at a time.

The average time taken to wash each car is 10 minutes.

City Centre Car Wash is currently operating at 80% capacity and Suburban Car Wash at 70% capacity.

REQUIRED

(a) For City Centre Car Wash, calculate the following correct to **two** decimal places:

(i) the total number of cars washed per month

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.....[2]

(ii) the total variable operating cost per month

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(iii) the total operating cost per month

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(iv) the average cost per car wash

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(v) the price to be charged per car to give a profit margin of 20%

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(vi) the total profit per month.

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(b) Using the price calculated in **(a)–(v)** above, calculate the following for City Centre Car Wash, correct to **two** decimal places:

(i) the contribution per car (per unit)

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(ii) the break-even point in units

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(iii) the margin of safety, in dollars, when operating at 80% capacity

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(iv) the margin of safety, in dollars, if operating efficiency falls to 60% capacity

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(v) the contribution/sales (C/S) ratio when operating at 80% capacity.

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Suburban Car Wash charges the same price as City Centre Car Wash.

At that price Suburban Car Wash shows a contribution to sales (C/S) ratio of 40%. Fixed costs are $3240.

REQUIRED

(c) Calculate, for Suburban Car Wash

(i) the break-even point in units **and** in dollars

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(ii) the total monthly profit when operating at 70% capacity.

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