Paper F5
September/December 2017 - Sample Questions

Question 31 - Suggested answer

(Note: This is only a suggested answer - the official examiners answer will appear on the ACCA website in a few weeks time. If you spot any arithmetical mistakes then please do let me know in the Ask the Tutor Forum :-))

Part (a)

Price demand equation:

$b = 2/5,000 = 0.0004$

The maximum demand occurs when P = 0, therefore:

$a = 0.0004 \times 1,000,000 = 400$

Therefore: P = 400 - 0.0004Q

Marginal revenue equation:

MR = 400 - 0.0008Q

Variable costs per batch:

Materials:	(500gm x $0.10) + (300gm x $0.50) = $200
Variable running costs:	20/60 x $6 = $2

Labour cost:

Total time for 1,000 batches: $1,000 \times (5 \times 1,000^{(-0.321928)}) = 540.986$ hours
Total time for 999 batches: $999 \times (5 \times 999^{(-0.321928)}) = 540.619$ hours
Therefore time for batch number 1,000 = 540.986 - 540.619 = 0.367 hours
Therefore labour cost of 1000th batch = 0.367 x $18 = $6.61

Total variable (marginal) cost = 200 + 2 + 6.61 = $208.61 per batch

Optimum selling price:

For maximum profit, MR = MC

400 - 0.0008Q = 208.61

0.0008Q = 191.39

Q = 239,238

In the price demand equation:

P = 400 - (0.0004 x 239,238) = **$304.31 per batch**

Note: Rounding difference in calculating the labour cost will result in a different answer, but would still get full marks provided that the rounding in reasonable. Also, remember that each step is marked separately and so (provided that your workings are easy to follow) a mistake in one step will not result in you losing all of the marks.

Part (b)

I would recommend that a market skimming approach would be the most suitable pricing strategy for TR when launching the new anti-malaria drug, for the following reasons:

- no similar drugs currently exist, so there is no competition
- TR have obtained a patent for the new drug, and so there will be no competition in the future while the patent remains in force
- the new drug is eagerly awaited all over the world, and so there will be big demand
- the new drug cost 'millions' of dollars to develop, and so TR will wish to recover their costs while the patent remains in force

A market penetration approach would not be suitable. It would only be worth considering if there were already other companies selling a similar drug and TR wished to gain market share. This is not the case with this new anti-malaria drug.