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***What price would the retailer set in that case to maximize its profit?***

In last month market, if retailer try to maximize profit, all it gets in serving each segment of customer is –

Profit in serving only to H customers : 50\*20 – (25 + 19.5\*50) = 0

Profit in serving only to L customers : 50\*10 – (25 + 19.5\*50) = -500

This means, retailer didn’t sold this product profitably, as at max he just served H customers of count 50 till last month, and even then his profit will be 0.

***(a) Offer a trade discount to the retailer (i.e. offer a new wholesale price, with the amount of the trade discount to be determined).***

Now, that market segment has changed to 80:20 for L:H customers. Maximum possible revenue in market per quarter is –

Serving L customers at $10 – 10\*80 = 800

Serving H customers at $10 – 10\*20 = 200

Total = $1000

Serving only H customers – 20\*20 = $400

Start computing wholesale price (With trade discounts)

$3, max retailer profit – 100\*10 – (25 + 3\*100) = 1000 – 25 – 300 = 625

$4, max retailer profit – 100\*10 – (25 + 4\*100) = 1000 – 25 – 400 = 575

$5, max retailer profit – 100\*10 – (25 + 5\*100) = 1000 – 25 – 500 = 475

$6, max retailer profit – 100\*10 – (25 + 6\*100) = 1000 – 25 – 600 = 375

$7, max retailer profit – 100\*10 – (25 +7\*100) = 1000 – 25 – 700 = 275

$8, max retailer profit – 100\*10 – (25 +8\*100) = 1000 – 25 – 800 = 175

$9, max retailer profit – 100\*10 – (25 +9\*100) = 1000 – 25 – 900 = 75

$10, max retailer profit – 100\*10 – (25 +10\*100) = 1000 – 25 – 1000 = -25

***(b) Don’t change the wholesale price from its original value, but offer a coupon to consumers as a free-standing insert in the local newspaper (the coupon value is to be determined). The coupon will have a limited expiry date and it will cost segment H – and only segment H – $4 to redeem (The coupon redemption cost is borne solely by segment H consumers and it is neither revenue for the manufacturer nor the retailer)***

Keeping wholesale price at $19.5 per unit, there is no way to make profit for the retailer, because he can serve only 20 customers in H segment, calculating profit

20\*20 – (25 + 19.5\*20) = 400 – 25 – 390 = -15

So, even if they give a coupon discount to H customers, there are just 20 customers left with max price they are willing to pay is $20.

***(c) Offer a coupon to consumers and offer a trade promotion to the retailer (both the coupon value and the trade deal will have to be determined).***

If both are offered – then also, max price at which manufacturer has to sell to retailer is $10.

At $10, max retailer profit – 100\*10 – (25 +10\*100) = 1000 – 25 – 1000 = -25

Irrespective, of coupon code it won’t add value.