13. (2 points)

The following information applies to an experience rating plan:

Risk Class	Experience Mod Factor	Standard Premium
A	0.85	$47,600
B	0.95	$77,900
C	1.10	$45,100
D	1.20	$31,200

The current off-balance factor is 0.99.

In the upcoming year, half of the manual premium from risk class D will move to a new risk class, class E. Assume that there are no other changes.

Calculate the experience mod factor for risk class E that yields an off-balance of 1.01.

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Question 13

Sample 1

OB = .99 = STD / MAN
STD = 201,800

MAN: A = 56,000
82,000
41,000
26,000
205,000

Where X = Non Experience Rated Premium

.99 = STD + X / MAN + X

.99 MAN + .99X = STD + X

.99 MAN – STD = .01 X

X = 115,000

	Mod	MAN Prem	STD Prem
A	.85	56,000	47,600
B	.95	82,000	77,900
C	1.1	41,000	45,100
D	1.2	13,000	15,600
E	M	13,000	13000M
			186,200 + 13,000 M

1.01 = (186,200 + 13,000 M + 115,000) / (205,000 + 115,000) → **M = 1.692**

Sample 2

Manual Prem = Standard Prem / Mod

Claim	Man Prem
A	56000
B	82000
C	41000
D	26000
X	115000

OB = .99 → X = 115000; Mod = 1.00

2nd Year

$$\frac{56*0.85+82*0.95+41*1.1+13*1.2+13*Y+115}{56+82+41+13+13+115} \longrightarrow Y = 1.69$$

Claim	Man Prem	Mod
A	56000	0.85
B	82000	0.95
C	41000	1.1
D	13000	1.2
E	13000	Y
X	115000	1.0