**Reading:** Werner 14: Implementation
**Model:** Text Example
**Problem Type:** AARD Method

**Find** Calculate the base rate required to achieve an average rate increase of 5%

**Given** current average premium 1,158.44

**Relativities**

| AOI levels | current | indicated | expos. |
|---|---|---|---|
| less than 100,000 | 0.800 | 0.650 | 6,400 |
| equal to or above 100,000 | 1.000 | 1.100 | 5,400 |

| Territories | current | indicated | expos. |
|---|---|---|---|
| territory 1 | 0.700 | 0.550 | 2,800 |
| territory 2 | 1.000 | 1.050 | 9,000 |

**Fixed Expense Fee**

| | current | indicated |
|---|---|---|
| Fixed Expense Fee | 0 | 5 |

Prelimiary Step: rebase the indicated relativies so the base level relativity for each variable is 1.0

| AOI levels | current | indicated |
|---|---|---|
| less than 100,000 | 0.750 | 0.591 |
| equal to or above 100,000 | 1.000 | 1.000 |

** rebased*

| Territories | current | indicated |
|---|---|---|
| territory 1 | 0.800 | 0.524 |
| territory 2 | 1.000 | 1.000 |

** rebased*

Step 1 calculate the product of the exposure-weighted average of the rebased indicated relativities: $\bar{S}(p)$

| | | |
|---|---|---|
| AOI average relativity | = | 0.7781 |
| Territory average relativity | = | 0.8870 |
| | | 0.6902 *<==== product = $\bar{S}(p)$* |

Step 2 calculate the proposed average premium: $\bar{P}(p)$

| | | | | |
|---|---|---|---|---|
| $\bar{P}(p)$ | = | (current average premium) | x | ( 1+ rate change) |
| | = | 1,158.44 | x | 1.05 |
| | = | 1,216.36 | | |

Step 3 calculate the proposed base rate B(p)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| B(p) | = | ( | $\bar{P}(p)$ | - | A(p) | ) | / $\bar{S}(p)$ |
| | = | ( | 1216.363 | - | 5 | ) | / 0.6902 |
| | = | 1,755.10 | *<== final answer* | | | | |

**Reading:** Werner 14: Implementation
**Model:** Text Example
**Problem Type:** AARD Method

**Find** Calculate the base rate required to achieve an average rate increase of 12%

**Given** current average premium 970.54

**Relativities**

| AOI levels | current | indicated | expos. |
|---|---|---|---|
| less than 100,000 | 0.800 | 0.650 | 5,700 |
| equal to or above 100,000 | 1.000 | 1.150 | 4,900 |

| Territories | current | indicated | expos. |
|---|---|---|---|
| territory 1 | 0.800 | 0.700 | 2,900 |
| territory 2 | 1.000 | 1.150 | 7,700 |

**Fixed Expense Fee**

| | current | indicated |
|---|---|---|
| Fixed Expense Fee | 15 | 25 |

Prelimiary Step: rebase the indicated relativies so the base level relativity for each variable is 1.0

| AOI levels | current | indicated |
|---|---|---|
| less than 100,000 | 0.750 | 0.565 |
| equal to or above 100,000 | 1.000 | 1.000 |

** rebased*

| Territories | current | indicated |
|---|---|---|
| territory 1 | 0.800 | 0.609 |
| territory 2 | 1.000 | 1.000 |

** rebased*

Step 1 calculate the product of the exposure-weighted average of the rebased indicated relativities: $\bar{S}(p)$

| | | |
|---|---|---|
| AOI average relativity | = | 0.7662 |
| Territory average relativity | = | 0.8929 |
| | | 0.6842 <==== *product* = $\bar{S}(p)$ |

Step 2 calculate the proposed average premium: $\bar{P}(p)$

| | | | | |
|---|---|---|---|---|
| $\bar{P}(p)$ | = | (current average premium) | x | ( 1+ rate change) |
| | = | 970.54 | x | 1.12 |
| | = | 1,087.01 | | |

Step 3 calculate the proposed base rate B(p)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| B(p) | = | ( | $\bar{P}(p)$ | - | A(p) | ) | / | $\bar{S}(p)$ |
| | = | ( | 1087.006 | - | 25 | ) | / | 0.6842 |
| | = | 1,552.24 | <== *final answer* | | | | | |