**Reading:** Friedland 05 (Triangles)
**Model:** 2014.Fall #14
**Problem Type:** Building Triangles from Raw Claims Data

**Find** Build the AY (Accident Year) paid & reported claim triangles. (Unless stated otherwise these are cumulative triangles)

**Given**

| | | | 2011 | | 2012 | | 2013 | |
|---|---|---|---|---|---|---|---|---|
| | | | paid in | ending case O/S | paid in | ending case O/S | paid in | ending case O/S |
| claim id | AY | RY | CY | CY | CY | CY | CY | CY |
| 1 | 2011 | 2011 | 260 | 0 | 0 | 0 | 0 | 0 |
| 2 | 2011 | 2011 | 200 | 500 | 0 | 500 | 230 | 270 |
| 3 | 2011 | 2012 | | | 620 | 0 | 0 | 0 |
| 4 | 2012 | 2012 | | | 200 | 200 | 400 | 0 |
| 5 | 2012 | 2012 | | | 460 | 0 | 0 | 0 |
| 6 | 2012 | 2012 | | | 0 | 400 | 700 | 400 |
| 7 | 2012 | 2013 | | | | | 300 | 230 |
| 8 | 2013 | 2013 | | | | | 400 | 200 |
| 9 | 2013 | 2013 | | | | | 600 | 300 |
| 10 | 2013 | 2013 | | | | | | 100 |
| 11 | 2013 | 2014 | | | | | | |
| 12 | | | | | | | | |
| 13 | | | | | | | | |
| 14 | | | | | | | | |
| 15 | | | | | | | | |
| 16 | | | | | | | | |
| 17 | | | | | | | | |
| 18 | | | | | | | | |

Step 1 Sum across AY (This is simple in Excel but easy to make a mistake with pencil and paper.)

**Suggestion:** *Use a ruler to draw a horizontal line between one AY and the next.*

| | | 2011 | | 2012 | | 2013 | |
|---|---|---|---|---|---|---|---|
| AY | RY | paid in CY | ending case O/S CY | paid in CY | ending case O/S CY | paid in CY | ending case O/S CY |
| 2011 | all | 460 | 500 | 620 | 500 | 230 | 270 |
| 2012 | all | 0 | 0 | 660 | 600 | 1,400 | 630 |
| 2013 | all | 0 | 0 | 0 | 0 | 1,000 | 600 |
| 2014 | all | 0 | 0 | 0 | 0 | 0 | 0 |

Step 2 Transfer the colour-coded values from Step 1 into these triangles…

incremental PAID claims

| AY | 12 | 24 | 36 |
|---|---|---|---|
| **2011** | 460 | 620 | 230 |
| **2012** | 660 | 1,400 | |
| **2013** | 1,000 | | |
| **2014** | | | |

case O/S

| AY | 12 | 24 | 36 |
|---|---|---|---|
| **2011** | 500 | 500 | 270 |
| **2012** | 600 | 630 | |
| **2013** | 600 | | |
| **2014** | | | |

Step 3 (final answer) Form the CUMULATIVE paid triangle by summing across rows in the incremental paid triangle

cumulative PAID claims

| AY | 12 | 24 | 36 |
|---|---|---|---|
| **2011** | 460 | 1,080 | 1,310 |
| **2012** | 660 | 2,060 | |
| **2013** | 1,000 | | |
| **2014** | | | |

Ex: 1,080 = 460 + 620

1,310 = 460 + 620 + 230

Step 4 (final answer) Form the CUMULATIVE reported triangle: *cumulative reported claims = (cumulative paid claims) + (Case O/S)*

cumulative REPORTED claims

| AY | 12 | 24 | 36 |
|---|---|---|---|
| **2011** | 960 | 1,580 | 1,580 |
| **2012** | 1,260 | 2,690 | |
| **2013** | 1,600 | | |
| **2014** | | | |