# 1. The following information regarding the change in the prices and quantities of each individual good in a hypothetical economy is provided. Determine the Paasche and Laspeyres Price Indices for Year 0, Year 1, and Year 2, using Year 0 as the base year.

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| --- | --- | --- | --- |
|  **Item** | **Year 0** | **Year 1** | **Year 2** |
| Good A |     $5 |     $6 |      $7 |
| Good B |    $10 |     $11 |     $13 |
| Good C |    $20 |     $22 |     $24 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Year 0** | **Year 1** | **Year 2** |
| Good A |      50 |      55 |      57 |
| Good B |      60 |      65 |      67 |
| Good C |      70 |      75 |      77 |

2.

|  |  |
| --- | --- |
| **Year** | **Average house price (£000)** |
| 2012 | 200 |
| 2013 | 220 |
| 2014 | 230 |
| 2015 | 210 |
| 2016 | 195 |

1. Use 2012 as the base period to compute the simple index for this time series.
2. By what percentage did the average house price increase or decrease between 2012 and 2016?
3. Calculate an exponential smoothed series for this time series, using $w=0.3$. Forecast the average house price in 2020.
4. Graph the initial and smoothing time series.

3. Refer to the table in Problem #2, calculate the Holt–Winters components using *w* = 0.7 and *v* = 0.5. Use the Holt–Winters series to forecast the average house price in 2020.