Calculate the value of the fixed-weight price index for 2016 and 2017, using 2010 as the base year. First 2016:

\[
P_{t-1} = \frac{\sum_{i=1}^{3} p_{t-1}^i q_0^i}{\sum_{i=1}^{N} p_0^i q_0^i} = \frac{p_{t-1}^1 q_0^1 + p_{t-1}^2 q_0^2 + p_{t-1}^3 q_0^3}{p_0^1 q_0^1 + p_0^2 q_0^2 + p_0^3 q_0^3} = \frac{14(7) + 10(5) + 5(5)}{5(7) + 8(5) + 4(5)} = \frac{173}{95} = 1.8210526.
\]

Next 2017:

\[
P_t = \frac{\sum_{i=1}^{3} p_t^i q_0^i}{\sum_{i=1}^{N} p_0^i q_0^i} = \frac{p_t^1 q_0^1 + p_t^2 q_0^2 + p_t^3 q_0^3}{p_0^1 q_0^1 + p_0^2 q_0^2 + p_0^3 q_0^3} = \frac{16(7) + 10(5) + 10(5)}{5(7) + 8(5) + 4(5)} = \frac{212}{95} = 2.2315789.
\]

The rate of inflation is calculated as the percent change in the fixed-weight price index:

\[
\pi_t = \frac{P_t - P_{t-1}}{P_{t-1}} = \frac{2.2315789 - 1.8210526}{1.8210526} = 0.2254335;
\]

that is, a 22.54 percent increase in prices.

The fixed-weight price indexes can be used to calculate real output in 2016 and 2017. 2016 (time \(t - 1\)):

\[
\text{Real GDP in 2016} = Y_{t-1} = \frac{\text{Nominal GDP}}{\text{Price Index}} = \frac{Q_{t-1}}{P_{t-1}} = \frac{120}{1.8210526} = 65.895955.
\]

2017 (time \(t\)):

\[
\text{Real GDP in 2017} = Y_t = \frac{\text{Nominal GDP}}{\text{Price Index}} = \frac{Q_t}{P_t} = \frac{182}{2.2315789} = 81.556606.
\]

The real growth rate (rate of growth of real GDP) is calculated as the percent change in real GDP:

\[
g_t = \frac{Y_t - Y_{t-1}}{Y_{t-1}} = \frac{81.556606 - 65.895955}{65.895955} = 0.2376572;
\]

that is, a 23.76 percent growth rate.