## Unit 2 Progress Check: FRQ

**1.** Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.

| | | Prices | |
|---|---|---|---|
| Product | Market Basket of Goods | **2010** | **2015** |
| Mocha coffee | **100** cups | **$2.00** per cup | **$2.50** per cup |
| Sweet pudding | **50** quarts | **$1.50** per quart | **$2.20** per quart |
| Cassava leaf salad | **25** packages | **$1.00** per package | **$1.20** per package |

The nation of Kona cultivates coffee beans and cassava, from which all their consumer goods are produced.

(a) Calculate the cost of the market basket of goods in the table in **2010** and in **2015**. Show your work.

(b) Use **2010** as the base year to calculate the price indices for **2010** and **2015** for the market basket of goods in the table. Show your work.

(c) In order for a citizen of Kona to maintain the same standard of living between **2010** and **2015**, what percentage change in nominal income would be needed? Explain.

Please respond on separate paper, following directions from your teacher.

### Part (a)

Select a point value to view scoring criteria, solutions, and/or examples and to score the response. The two criteria in Part (a) are achieved independently.Students must show their work in order to receive each point.

| 0 | 1 | 2 ✓ |
|---|---|---|

The response accurately includes both of the criteria below.

- ☐ Calculates the cost of the 2010 Market Basket as $300 and shows appropriate work:
  $\$200 + \$75 + \$25 = \$300$
- ☐ Calculates the cost of the 2015 Market Basket as $390 and shows appropriate work:

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$\$250 + \$110 + \$30 = \$390$

### Part (b)

Select a point value to view scoring criteria, solutions, and/or examples and to score the response. The two criteria in part (b) are achieved independently. Students must show their work in order to receive each point.

| 0 | 1 | ✓ 2 |
|---|---|---|

The response accurately includes both of the criteria below.

- ☐ Correctly calculates the 2010 (base year) index as 100 and shows appropriate work: $\frac{\$300}{\$300} \times 100 = 100$
- ☐ Correctly calculates the 2015 index as 130 and shows appropriate work: $\frac{\$390}{\$300} \times 100 = 130$

### Part (c)

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

**General Considerations**

The response should correctly calculate the inflation rate between 2010 and 2015 and explain that nominal income must rise by this inflation rate in order to maintain the same standard of living between 2010 and 2015. The value of the inflation rate must be consistent with the calculated percentage change of the price index in part (b).

| 0 | ✓ 1 |
|---|---|

Response states that nominal income must rise by 30 percent (the inflation rate) between 2010 and 2015 and explains that nominal income must rise by the inflation rate in order to maintain the same standard of living during this time period.

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**2.** Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. If the question prompts you to "Calculate," you must show how you arrived at your final answer.

The table below shows unemployment and labor force statistics for an economy.

| | |
|---|---|
| Actual rate of unemployment | 3% |
| Natural rate of unemployment | 4% |
| Population of the country | 125 million |
| Number of people employed | 97 million |
| Number of people unemployed | 3 million |
| Number of people employed part time | 5 million |
| Number of discouraged workers | 2 million |

(a) Calculate the size of the labor force. Show your work.

(b) Calculate the labor force participation rate. Show your work.

(c) Given the state of the economy described in the table, is actual real output less than, greater than, or equal to potential real output? Explain.

(d) Calculate what the cyclical unemployment rate would be if the actual rate of unemployment increased to 5 percent. Show your work.

(e) Suppose discouraged workers reenter the labor force and find employment. Will the actual rate of unemployment increase, decrease, or stay the same?

Please respond on separate paper, following directions from your teacher.

### Part (a)

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

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Response calculates the size of the labor force as 100 million and shows appropriate work.

$$Labor\ Force = Employed + Unemployed = 97\ \text{million} + 3\ \text{million} = 100\ \text{million}$$

**Part (b)**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

Response calculates the labor force participation rate as 80% and shows appropriate work.

$$Labor\ force\ participation\ rate = \frac{Labor\ force}{Population} \times 100 = \frac{100}{125} \times 100 = 80\%$$

**Part (c)**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

Response states that actual real output is greater than potential real output and explains that when the actual rate of unemployment is less than the natural rate of unemployment, the economy is operating above full employment.

**Part (d)**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | 1 ✓ |
|---|---|

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Response calculates the cyclical rate of unemployment as 1% and shows appropriate work:

$$\textit{Cyclical rate of unemployment} = \textit{Actual rate of unemployment} - \textit{Natural rate of unemployment} = 5\% - 4\% = 1\%$$

**Part (e)**

Select a point value to view scoring criteria, solutions, and/or examples and to score the response.

| 0 | ✓ 1 |
|---|---|

Response states that the actual rate of unemployment will decrease.