**Problem**

Suppose you are an economist analyzing the economy of AlphaLand, a small country.

Consumption expenditure in AlphaLand for the current year is $40 billion. Foreign direct investment (FDI) in AlphaLand for the current year is $15 billion. Government expenditure for the current year is $20 billion. AlphaLand is a net importer, meaning its imports exceed its exports. The trade deficit for the current year is $9 billion.

There's a:

* 40% chance that consumption will decrease by 60% and a 60% chance it will decrease by 30 billion.
* 30% chance that investment will decrease by 20% and a 70% chance it will remain unchanged.
* 50% chance that government spending will decrease by 40% and a 50% chance it will decrease by 10 billion.
* 60% chance that net exports will decrease by $2 billion and a 40% chance they will remain unchanged.

Determine the expected GDP of AlphaLand for the upcoming year rounded to the nearest billion and calculate the fraction .

**Solution**

Next year’s expected:

Consumption (C) = 40%\*(40-60%\*40)+60%\*10 = 12.4

Foreign Investment (I) = 30%\*(15-20%\*15)+70%\*15 = 14.1

Government Spending (G) = 50%\*(20-40%\*20)+50%\*10 = 11

Net Exports (NX) = –1 \* [60%\*(9-2) + 40%\*9] = –7.8 (minus because it is a deficit)

GDP = C+I+G+NX

GDP = 12.4+14.1+11-7.8 = 29.7 billion

**Answer: 3**