

## Nobel Prize in Physics

The 2009 Nobel Prize in Physics was awarded to three men. Once again, I was not one of them. The first man holds dual citizenship in Great Britain and the United States. The second man is a citizen of both Canada and the United States. The third recipient is a United States citizen.

A.) Based on the citizenship(s) of these winners, what countries were honored by the Nobel Prize in Physics? What fraction of the award can each country claim as an honor?

B.) The first recipient (the British/American) received half of the monetary award, and the other two men split the other half equally. If the money went to their countries of citizenship instead of to the men, what fraction of the reward could each country claim? [Hint: Because the award was not shared equally, your computations from part A will not work here. The concept is similar, but the numbers are different.]

C.) The financial award was \$1.4 million (\$1,400,000). If the money were divided up according to section B, how much money would each country receive?

## Nobel Prize in Physics (Answers)

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A.) Based on the citizenship(s) of these winners, what countries were honored by the Nobel Prize in Physics, and what fraction of the award can each country claim as an honor?

There are three men, so each represents one-third of the honor. The first is half British and half American, so he can claim one sixth of the honor for Britain, and one sixth for America ( $\frac{1}{2} \cdot \frac{1}{3} = \frac{1}{6}$ ). The same is true for the second man, except his honors go to Canada and America. The third man's one third is entirely American.

So the countries and their shares are:

Canada – one-sixth

Great Britain – one-sixth, and

United States – two-thirds (one-sixth plus one-sixth plus one-third)

B.) The first recipient (the British/American) received half of the monetary award, and the other two men split the other half equally. If the money went to their countries of citizenship instead of to the men, what fraction of the reward could each country claim? [Hint: Because the award was not shared equally, your computations from part A will not work here. The concept is similar, but the numbers are different.]

The first man represents half of the award, so Britain and America would each get half of his half, for one-fourth each. The second and third men would split the other half, so each of them would receive one-fourth. The third man's share is not split further, but the second man represents Canada and the USA, so his one-fourth is again split into two equal parts, giving one-eighth to Canada and one-eighth to America. Therefore:

First man = one half = one-fourth to Britain, one-fourth to America

Second man = one-fourth = one-eighth to Canada, one-eighth to America

Third man = one-fourth, all to America. This means:

Britain gets one-fourth,

Canada gets one-eighth, and

America gets five-eighths (one-eighth plus one-fourth plus one-fourth).

C.) The financial award was \$1.4 million (\$1,400,000). If the money were divided up according to section B, how much money would each country receive?

Britain gets one-fourth of \$1.4m, or \$350,000.

Canada gets one eighth, or \$175,000.

America gets five-eighths, or \$875,000.