

Geography Awareness



“People from around the world can test their knowledge of geography by correctly placing 10 randomly selected countries on the map, at the web site <http://www.geographyolympics.com/>.

So in honor of Geography Awareness Week I decided to see if the Global Puzzle really could teach me the world. Figuring I need a baseline for comparison I start with the Geography Olympics web site. When it asks me what country I’m from I consider lying. I don’t want to lower the US average any more than its current value.

My first try I’m asked to identify Argentina, Botswana, Slovenia, Turkey, Norway, Benin, Jamaica, Niger, Ireland, and South Korea. I get Turkey right. On my second try I’m asked to find Panama, Mongolia, Mozambique, Guinea, Libya, Malaysia, Zambia, Netherlands, Vanuatu and Honduras. I get Panama, Mongolia and Honduras right. On my third try I draw Kuwait, Switzerland, Peru, Solomon Islands, Zimbabwe, Comoros, Greece, Vietnam, Nauru and Botswana. I guess Greece correctly.

I start working on the global puzzle, spending almost two complete days on it! Then I take the test again. This time I get 2, 4, 6 correct out of 10 on my three trials.”

Source: Mary Challenger, Des Moines Register, Nov 20, 2004.

Fill in the data table:

Group 1			Group 2		
Try 1	Try 2	Try 3	Try 1	Try 2	Try 3

Calculate the statistics:

$$\bar{y}_1 = \quad s_1 = \quad n_1 =$$

$$\bar{y}_2 = \quad s_2 = \quad n_2 =$$

We’re going to test if the geography puzzle the author used between test taking helped her do better, which corresponds to $H_o : \mu_1 = \mu_2$ vs $H_A : \mu_1 < \mu_2$.

Calculate the test statistic:

$$t = \frac{\bar{y}_1 - \bar{y}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} =$$

Find the P-value for the test statistic.

Are the assumptions for the hypothesis test satisfied?

What is your conclusion?