**Graphing Data and Statistical Analysis with Excel Practice
Answer Key**

**Independent Practice: *Unemployment: College vs. High School Graduates***

1. Creating a graph answer
2. Formatting a graph answer





1. Calculating statistics answer
2. Graphing data differences answer
3. Graphing mean and standard deviation for differences answer



1. Compute the sample differences t-value, p-value and sampling standard deviation answers



Because *p*-value = 0.00000004 is less than 0.05 or 0.10 then there is evidence at the 5% or 10% level of significance to reject the original assumption (*H*0) that unemployment rates are the same, and conclude that the unemployment rate for the high school graduates is greater than the unemployment rate for college graduates.

**Independent Practice: *Birth Rates vs. Death Rates***

1. Creating a graph answer
2. Formatting a graph answer



1. Calculating statistics answer
2. Graphing data differences answer



1. Graphing mean and standard deviation for differences answer



1. Compute the sample differences t-value, p-value, and sampling standard deviation answer



Because *p*-value = 0.327 is greater than 0.05 or 0.10, no evidence exists at the 5% or 10% level of significance to reject the original assumption (*H*0) that there is a statistical significant difference between birth rates and death rates in Ohio counties.

**Addendum: *Data Set Descriptions and Sources***

1. Guided Practice: *Average Faculty Salaries, Males vs. Females*

This paired data of average salaries for assistant professors comes from a random sample of 22 US colleges and universities and compares average salaries (x $1,000/year) for male and female assistant professors. (*Source*: Academe, Bulletin of the American Association of University Professors)

|  |  |  |
| --- | --- | --- |
| **College ID** | **Male AP** | **Female AP** |
| C-1 | 34.5 | 33.9 |
| C-2 | 30.5 | 31.2 |
| C-3 | 35.1 | 35.0 |
| C-4 | 35.7 | 34.2 |
| C-5 | 31.5 | 32.4 |
| C-6 | 34.4 | 34.1 |
| C-7 | 32.1 | 32.7 |
| C-8 | 30.7 | 29.9 |
| C-9 | 33.7 | 31.2 |
| C-10 | 35.3 | 35.5 |
| C-11 | 30.7 | 30.2 |
| C-12 | 34.2 | 34.8 |
| C-13 | 39.6 | 38.7 |
| C-14 | 30.5 | 30.0 |
| C-15 | 33.8 | 33.8 |
| C-16 | 31.7 | 32.4 |
| C-17 | 32.8 | 31.7 |
| C-18 | 38.5 | 38.9 |
| C-19 | 40.5 | 41.2 |
| C-20 | 25.3 | 25.5 |
| C-21 | 28.6 | 28.0 |
| C-22 | 35.8 | 35.1 |

1. Independent Practice: *Unemployment: College vs. High School Graduates*

This paired data shows the percentage of unemployed high school graduates vs. unemployed college graduates for the years 1998-2010. (*Source*: Statistical Abstract of the U.S.)

|  |  |  |
| --- | --- | --- |
| **Year** | **College** | **High School** |
| 1999 | 2.8 | 5.9 |
| 2000 | 2.2 | 4.9 |
| 2001 | 2.2 | 4.8 |
| 2002 | 1.7 | 5.4 |
| 2003 | 2.3 | 6.3 |
| 2004 | 2.3 | 6.9 |
| 2005 | 2.4 | 6.9 |
| 2006 | 2.7 | 7.2 |
| 2007 | 3.5 | 10.0 |
| 2008 | 3 | 8.5 |
| 2009 | 1.9 | 5.1 |
| 2010 | 2.5 | 6.9 |

1. Independent Practice: *Birth Rates vs. Death Rates*

This paired random sample from 22 Ohio counties shows the rates per 1,000 inhabitants.
(*Source*: County and City Data Book, 12th edition, U.S. Dept. of Commerce)

|  |  |  |
| --- | --- | --- |
| **County ID** | **Birth** | **Death** |
| CO-01 | 12.7 | 9.8 |
| CO-02 | 13.4 | 14.5 |
| CO-03 | 12.8 | 10.7 |
| CO-04 | 12.1 | 14.2 |
| CO-05 | 11.6 | 13.0 |
| CO-06 | 11.1 | 12.9 |
| CO-07 | 14.2 | 10.9 |
| CO-08 | 12.5 | 14.1 |
| CO-09 | 12.3 | 13.6 |
| CO-10 | 13.1 | 9.1 |
| CO-11 | 15.8 | 10.2 |
| CO-12 | 10.3 | 17.9 |
| CO-13 | 12.7 | 11.8 |
| CO-14 | 11.1 | 7.0 |