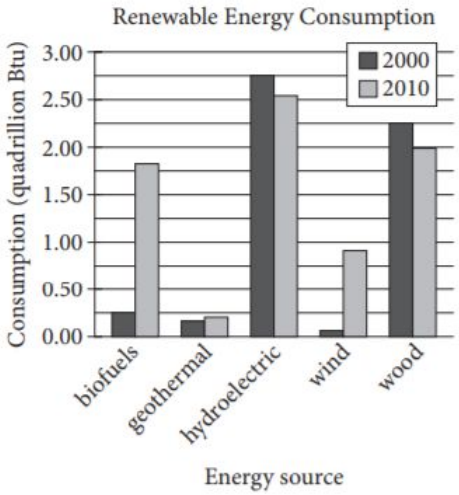
Charts-Level 3

With Calculator

1	 The bar graph above shows renewable energy consumption in quadrillions of British thermal units (Btu) in the United States, by energy source, for several energy sources in the years 2000 and 2010. Of the following, which best approximates the percent decrease in consumption of wood power in the United States from 2000 to 2010 ? A) 6% B) 11% C) 21% D) 26%	With Calculator

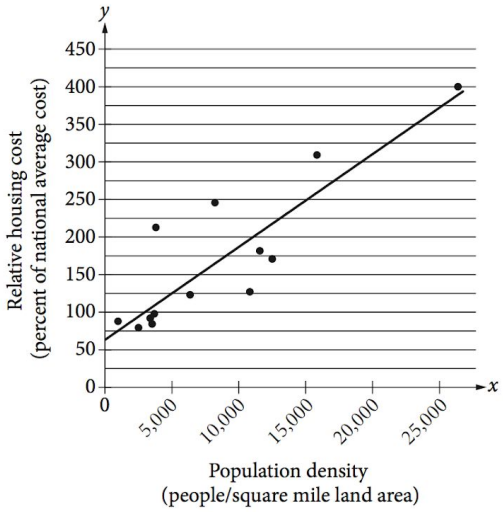
2	Dreams Recalled during One Week |	None	1 to 4	5 or more	Total | |---|---|---|---|---| | Group X | 15 | 28 | 57 | 100 | | Group Y | 21 | 11 | 68 | 100 | | Total | 36 | 39 | 125 | 200 | The data in the table above were produced by a sleep researcher studying the number of dreams people recall when asked to record their dreams for one week. Group X consisted of 100 people who observed early bedtimes, and Group Y consisted of 100 people who observed later bedtimes. If a person is chosen at random from those who recalled at least 1 dream, what is the probability that the person belonged to Group Y ? A) $\frac{68}{100}$ B) $\frac{79}{100}$ C) $\frac{79}{164}$ D) $\frac{164}{200}$	With Calculator

<table>
<tr>
<td>3</td>
<td>A square field measures 10 meters by 10 meters. Ten students each mark off a randomly selected region of the field; each region is square and has side lengths of 1 meter, and no two regions overlap. The students count the earthworms contained in the soil to a depth of 5 centimeters beneath the ground's surface in each region. The results are shown in the table below.
<table>
<tr><th>Region</th><th>Number of earthworms</th><th>Region</th><th>Number of earthworms</th></tr>
<tr><td>A</td><td>107</td><td>F</td><td>141</td></tr>
<tr><td>B</td><td>147</td><td>G</td><td>150</td></tr>
<tr><td>C</td><td>146</td><td>H</td><td>154</td></tr>
<tr><td>D</td><td>135</td><td>I</td><td>176</td></tr>
<tr><td>E</td><td>149</td><td>J</td><td>166</td></tr>
</table>
Which of the following is a reasonable approximation of the number of earthworms to a depth of 5 centimeters beneath the ground's surface in the entire field?
A) 150
B) 1,500
C) 15,000
D) 150,000</td>
<td>With Calculator</td>
</tr>
<tr>
<td>4</td>
<td>A sociologist chose 300 students at random from each of two schools and asked each student how many siblings he or she has. The results are shown in the table below.
Students' Sibling Survey
<table>
<tr><th>Number of siblings</th><th>Lincoln School</th><th>Washington School</th></tr>
<tr><td>0</td><td>120</td><td>140</td></tr>
<tr><td>1</td><td>80</td><td>110</td></tr>
<tr><td>2</td><td>60</td><td>30</td></tr>
<tr><td>3</td><td>30</td><td>10</td></tr>
<tr><td>4</td><td>10</td><td>10</td></tr>
</table>
There are a total of 2,400 students at Lincoln School and 3,300 students at Washington School.</td>
<td>With Calculator
Based on the survey data, which of the following most accurately compares the expected total number of students with 4 siblings at the two schools?
A) The total number of students with 4 siblings is expected to be equal at the two schools.
B) The total number of students with 4 siblings at Lincoln School is expected to be 30 more than at Washington School.
C) The total number of students with 4 siblings at Washington School is expected to be 30 more than at Lincoln School.
D) The total number of students with 4 siblings at Washington School is expected to be 900 more than at Lincoln School.</td>
</tr>
</table>

5	The tables below give the distribution of high temperatures in degrees Fahrenheit (°F) for City A and City B over the same 21 days in March. City A Temperature (°F) / Frequency 80 / 3 79 / 14 78 / 2 77 / 1 76 / 1 City B Temperature (°F) / Frequency 80 / 6 79 / 3 78 / 2 77 / 4 76 / 6 Which of the following is true about the data shown for these 21 days? A) The standard deviation of temperatures in City A is larger. B) The standard deviation of temperatures in City B is larger. C) The standard deviation of temperatures in City A is the same as that of City B. D) The standard deviation of temperatures in these cities cannot be calculated with the data provided.	With Calculator

6

The relative housing cost for a US city is defined to be the ratio $\frac{\text{average housing cost for the city}}{\text{national average housing cost}}$, expressed as a percent.



The scatterplot above shows the relative housing cost and the population density for several large US cities in the year 2005. The line of best fit is also shown and has equation $y = 0.0125x + 61$. Which of the following best explains how the number 61 in the equation relates to the scatterplot?

A) In 2005, the lowest housing cost in the United States was about \$61 per month.

B) In 2005, the lowest housing cost in the United States was about 61% of the highest housing cost.

C) In 2005, even in cities with low population densities, housing costs were never below 61% of the national average.

D) In 2005, even in cities with low population densities, housing costs were likely at least 61% of the national average.

With Calculator

7	A square field measures 10 meters by 10 meters. Ten students each mark off a randomly selected region of the field; each region is square and has side lengths of 1 meter, and no two regions overlap. The students count the earthworms contained in the soil to a depth of 5 centimeters beneath the ground's surface in each region. The results are shown in the table below. Which of the following is a reasonable approximation of the number of earthworms to a depth of 5 centimeters beneath the ground's surface in the entire field? A) 150 B) 1,500 C) 15,000 D) 150,000	With Calculator

Region	Number of earthworms	Region	Number of earthworms
A	107	F	141
B	147	G	150
C	146	H	154
D	135	I	176
E	149	J	166

8

Dreams Recalled during One Week

	None	1 to 4	5 or more	Total
Group X	15	28	57	100
Group Y	21	11	68	100
Total	36	39	125	200

The data in the table above were produced by a sleep researcher studying the number of dreams people recall when asked to record their dreams for one week. Group X consisted of 100 people who observed early bedtimes, and Group Y consisted of 100 people who observed later bedtimes. If a person is chosen at random from those who recalled at least 1 dream, what is the probability that the person belonged to Group Y ?

A) $\frac{68}{100}$

B) $\frac{79}{100}$

C) $\frac{79}{164}$

D) $\frac{164}{200}$