	Women		Men	
Salary ($1000)	Number	%	Number	%
10–15	89	11.8	26	1.1
15–20	192	25.4	221	9.0
20–25	236	31.2	677	27.6
25–30	111	14.7	823	33.6
30–35	86	11.4	365	14.9
35–40	25	3.3	182	7.4
40–45	11	1.5	91	3.7
45–50	3	0.4	33	1.3
50–55	2	0.3	19	0.8
55–60	0	0.0	11	0.4
60–65	0	0.0	0	0.0
65–70	1	0.1	3	0.1
Total	756	100.1	2451	99.9

(a) Explain why the total for women is greater than 100%.

(b) Make histograms for these data, choosing the vertical scale that is most appropriate for comparing the two distributions.

(c) Write a few sentences comparing the salary distributions for men and women.

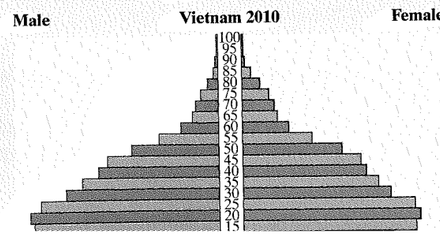
64. **Comparing AP® scores** The table below gives the distribution of grades earned by students taking the AP® Calculus AB and AP® Statistics exams in 2012.[35]

	No. of exams	Grade 5	4	3	2	1
Calculus AB	266,994	67,394	45,523	46,526	27,216	80,335
Statistics	153,859	19,267	32,521	39,355	27,684	35,032

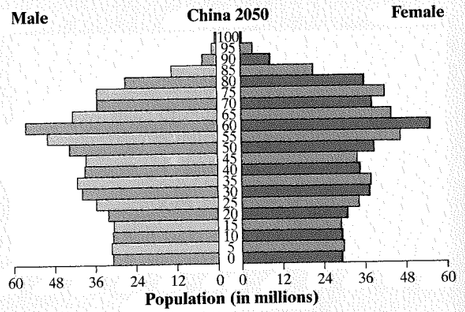
(a) Make an appropriate graphical display to compare the grade distributions for AP® Calculus AB and AP® Statistics.

(b) Write a few sentences comparing the two distributions of exam grades.

65. **Population pyramids** A population pyramid is a helpful graph for examining the distribution of a country's population. Here is a population pyramid for Vietnam in the year 2010. Describe what the graph tells you about Vietnam's population that year. Be specific.



66. **Population pyramids** Refer to Exercise 65. Here is a graph of the projected population distribution for China in the year 2050. Describe what the graph suggests about China's future population. Be specific.



67. **Student survey** A survey of a large high school class asked the following questions:

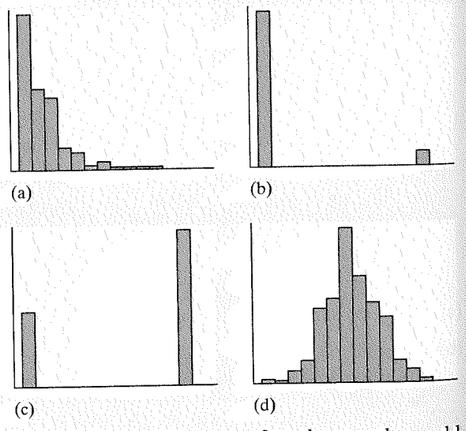
(i) Are you female or male? (In the data, male = 0, female = 1.)

(ii) Are you right-handed or left-handed? (In the data, right = 0, left = 1.)

(iii) What is your height in inches?

(iv) How many minutes do you study on a typical weeknight?

The figure below shows graphs of the student responses, in scrambled order and without scale markings. Which graph goes with each variable? Explain your reasoning.



68. **Choose a graph** What type of graph or graphs would you make in a study of each of the following issues at your school? Explain your choices.

(a) Which radio stations are most popular with students?

Multiple choice: Select the best answer for Exercises 69 to 74.

69. Here are the amounts of money (cents) in coins carried by 10 students in a statistics class: 50, 35, 0, 97, 76, 0, 0, 87, 23, 65. To make a stemplot of these data, you would use stems

(a) 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

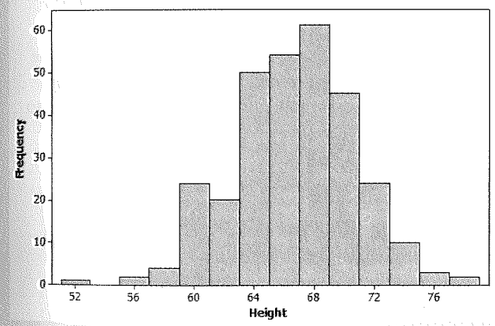
(b) 0, 2, 3, 5, 6, 7, 8, 9.

(c) 0, 3, 5, 6, 7.

(d) 00, 10, 20, 30, 40, 50, 60, 70, 80, 90.

(e) None of these.

70. The histogram below shows the heights of 300 randomly selected high school students. Which of the following is the best description of the shape of the distribution of heights?



(a) Roughly symmetric and unimodal

(b) Roughly symmetric and bimodal

(c) Roughly symmetric and multimodal

(d) Skewed to the left

(e) Skewed to the right

71. You look at real estate ads for houses in Naples, Florida. There are many houses ranging from $200,000 to $500,000 in price. The few houses on the water, however, have prices up to $15 million. The distribution of house prices will be

(a) skewed to the left.

(b) roughly symmetric.

(c) skewed to the right.

(d) unimodal.

(e) too high.

72. The following histogram shows the distribution of the percents of women aged 15 and over who have never married in each of the 50 states and the District of Columbia. Which of the following statements about the histogram is correct?

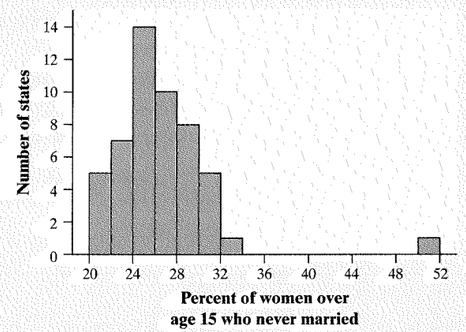
(a) The center of the distribution is about 36%.

(b) It would be better if the values from 34 to 50 were deleted on the horizontal axis so there wouldn't be a large gap.

(c) There was one state with a value of exactly 33%.

(d) There was one state with a value of exactly 33%.

(e) About half of the states had percents between 24% and 28%.



73. When comparing two distributions, it would be best to use relative frequency histograms rather than frequency histograms when

(a) the distributions have different shapes.

(b) the distributions have different spreads.

(c) the distributions have different centers.

(d) the distributions have different numbers of observations.

(e) at least one of the distributions has outliers.

74. Which of the following is the best reason for choosing a stemplot rather than a histogram to display the distribution of a quantitative variable?

(a) Stemplots allow you to split stems; histograms don't.

(b) Stemplots allow you to see the values of individual observations.

(c) Stemplots are better for displaying very large sets of data.

(d) Stemplots never require rounding of values.

(e) Stemplots make it easier to determine the shape of a distribution.

75. **Baseball players** (Introduction) Here is a small part of a data set that describes Major League Baseball players as of opening day of the 2012 season:

Player	Team	Position	Age	Height	Weight	Salary
Rodriguez, Alex	Yankees	Infielder	37	6-3	225	29,000,000
Gonzalez, Adrian	Dodgers	Infielder	30	6-2	225	21,000,000
Cruz, Nelson	Rangers	Outfielder	32	6-2	240	5,000,000
Lester, Jon	Red Sox	Pitcher	28	6-4	240	7,625,000