

Answer Key

Challenge: Skills and Applications

1. positive correlation; salaries tend to increase as years of experience increase. 2. no correlation; shoe size is not related to test scores.
3. negative correlation; the longer a person is on the plan, the less he or she should weigh.
4. positive correlation; more time spent training should increase the distance a person can run.
- 5–7. Sample equations given were determined using a graphing calculator and rounding to the nearest hundredth. Sample estimate was found using the given sample equation.
 5. *Sample answer:* $y = 0.29x + 50.82$
 6. *Sample answer:* 79.82 years
 7. *Sample answer:* $y = 1.31x - 17.46$
8. 21
9. 1930 and 1940: 0.29; 1930 and 1950: 0.79; 1930 and 1960: 0.83; 1930 and 1970: 1.04; 1930 and 1980: 1.22; 1930 and 1990: 1.24; 1940 and 1950: 1.29; 1940 and 1960: 1.10; 1940 and 1970: 1.29; 1940 and 1980: 1.46; 1940 and 1990: 1.43; 1950 and 1960: 0.9; 1950 and 1970: 1.29; 1950 and 1980: 1.51; 1950 and 1990: 1.47; 1960 and 1970: 1.67; 1960 and 1980: 1.82; 1960 and 1990: 1.66; 1970 and 1980: 1.97; 1970 and 1990: 1.65; 1980 and 1990: 1.33
10. about 1.30
11. They are close to the same value.