Exercise 27 Questions Siple linear regression

What are the independent and dependent variables in Figures 2, A, B, and C? How would you describe the relationship between the variables in Figures 2, A, B, and C?

 2. What are the independent and dependent variables in Figures 3, A, B, and C? How would you describe the relationship between the variables in Figures 3, A, B, and C?

 3. Was there a significant difference in the y intercept for the lines of best fi t in Figure 2 from the y intercept for the lines of best fi t in Figure 3? Provide a rationale for your answer.

 4. Yˆ represents the predicted value of y calculated using the equation Yˆ = a + bx. In Figure 2, the formula for SBP is Yˆ = 43.2 + 0.17x. Identify the y intercept and the slope in this formula. What does x represent in this formula?

 5. In the legend beneath Figure 2, the authors give an equation indicating that systolic blood pressure is SBP = 43.2 + 0.17x. If the value of x is postnatal age of 30 hours, what is the value for Yˆ or SBP for neonates ≤1,000 grams? Show your calculations.

 6. In the legend beneath Figure 2, the authors give an equation indicating that systolic blood pressure is SBP = 50.3 + 0.12x. If the value of x is postnatal age of 30 hours, what is the value for Yˆ or SBP for neonates 1,001–1,500 grams? Show your calculations.

 7. Compare the SBP readings you found in Questions 5 and 6. Explain the difference in these two readings.

 8. In the legend beneath Figure 2, the authors give an equation indicating that diastolic blood pressure is DBP = 25.8 + 0.13x. If the value of x is postnatal age of 30 hours, what is the value for Yˆ for neonates ≤ 1,000 grams? Show your calculations.

 9. In the legend beneath Figure 3, the authors give an equation indicating that diastolic blood pressure is

DBP = 30.4 + 0.11x. If the value of x is postnatal age of 30 hours, what is the value for Yˆ for neonates 1,001–1,500 grams? Show your calculations.

 10. In the legend beneath Figure 3, the authors give an equation indicating that diastolic blood pressure is

DBP = 30.4 + 0.11x. How different is the DBP when the value of x is postnatal age of 60 hours versus the 30 hours examined in Question 9