Assignment 1 answers

Problem Set 1

1. For Brick houses (Brick-Yes), which Neighborhood (East, North, or West) had the highest sales (sum of price)? West

2. For non-Brick houses (Brick-No), which Neighborhood (East, North, or West) had the highest sales (sum of price)? North

3. For Brick houses, which Neighborhood (East, North, or West) had the lowest sales (sum of price)? North

4. For non-Brick houses, which Neighborhood (East, North, or West) had the lowest sales (sum of price)?

East

5. What are the sales (sum of price) for Brick houses in the East Neighborhood (enter the exact number, no commas)? 2573900

Problem #2 questions:

Create a pivot table with Neighborhood for row labels, Brick for column labels, Average of SqFt for values.

6. For Brick houses, which Neighborhood (East, North, or West) had the highest average square feet?

West

7. For non-Brick houses, which Neighborhood (East, North, or West) had the highest average square feet?

West

8. For Brick houses, which Neighborhood (East, North, or West) had the lowest average square feet?

North

9. For non-Brick houses, which Neighborhood (East, North, or West) had the lowest average square feet?

North

10. What is the average square feet for non-Brick houses in the East Neighborhood (enter the whole number, no decimal places)? 2002

Problem #3: Descriptive Statistics Use descriptive statistics for the following questions.

Problem #3 questions:

11. What is the mean price for a house (enter number with no decimals)?

130427

12. What is the median price for a house (enter number with no decimals)?

125950

13. What is the minimum sq ft for a house (enter number with no decimals)?

1450

14. What is the maximum sq ft for a house (enter number with no decimals)?

2590

15. What is the minimum number of bedrooms (enter number with no decimals)?

2

16. What is the maximum number of bedrooms (enter number with no decimals)?

5

17. What is the minimum number of bathrooms (enter number with no decimals)?

2

18. What is the maximum number of bathrooms (enter number with no decimals)?

4

19. What is the minimum number of offers (enter number with no decimals)?

1

20. What is the maximum number of offers (enter number with no decim

6

Problem #4: Correlation Use correlation for the following questions. Create the correlation table only for Price, SqFt, Bedrooms, Bathrooms, and Offers.

Problem #4 questions:

21. When looking at correlations with Offers, which factor (Price, SqFt, Bedrooms, Bathrooms) has the strongest correlation?

SqFt

22. When looking at correlations with Offers, which factor (Price, SqFt, Bedrooms, Bathrooms) has the weakest correlation?

Price

23. When looking at all variables (Price, SqFt, Bedrooms, Bathrooms, Offers), what is the value of the strongest correlation (enter number to two decimal places x.xx)?

0.55 (between price and offers)

24. When looking at all variables (Price, SqFt, Bedrooms, Bathrooms, Offers), what is the value of the weakest correlation (enter number to two decimal places x.xx)?

-0.11 (between bedrooms and offers)

25. Which variable (SqFt, Bedrooms, Bathrooms, Offers) has a negative correlation with Price?

Offers

Problem #5: Linear Regression Use regression for the following questions. Create the regression where Price is the dependent variable (Y) and SqFt, Bedrooms, Bathrooms, and Offers are the independent variables (X’s). Use multiple regression to solve this problem.

Problem #5 questions:

26. Is the equation statistically significant (Yes or No)?

Yes

27. What is the R2 (enter number to four decimal places 0.xxxx)?

0.6981

28. What is the intercept (enter number with no decimals)?

-17347

29. What is the coefficient of SqFt (enter number with no decimals)?

62

30. What is the coefficient of Bedrooms (enter number with no decimals)?

9320

31. What is the coefficient of Bathrooms (enter number with no decimals)?

12646

32. What is the coefficient of Offers (enter number with no decimals)?

-13601

33. Is the intercept statistically significant (Yes or No)?

No

34. Is the coefficient of SqFt statistically significant (Yes or No)?

Yes

35. Is the coefficient of Bedrooms statistically significant (Yes or No)?

Yes

36. Is the coefficient of Bathrooms statistically significant (Yes or No)?

Yes

37. Is the coefficient of Offers statistically significant (Yes or No)?

Yes

38. If one bedroom is added to a house, how much value would you expect it to add to the price of the house (enter number with no decimals)?

9320

39. If one bathroom is added to a house, how much value would you expect it to add to the price of the house (enter number with no decimals)?

12646

40. How much of the change of the price of a house, in percent, is explained by the change in the variables SqFt, Bedrooms, Bathrooms, and Offers (enter as percent with two digits, no decimal places, no percent sign)?

70

Problem #6: Linear Regression with dummy variables

Use regression for the following questions.

First, create the following dummy variables:

• In column I, create a variable called Brick.

o 1 if BrickConstruction = Yes

o 0 if BrickConstruction = No

• In column J, create a variable called East

o 1 if Neighborhood = East

o 0 if Neighborhood is not East

• In column K, create a variable called North

o 1 if Neighborhood = North

o 0 if Neighborhood is not North

Create the regression where Price is the dependent variable (Y) and SqFt, Bedrooms, Bathrooms, Offers, Brick, East, and North are the independent variables (X’s). Use multiple regression to solve this problem.

Problem #6 questions:

41. Is the equation statistically significant (Yes or No)?

Yes

42. How much of the change of the price of a house, in percent, is explained by the change in the variables SqFt, Bedrooms, Bathrooms, Offers, and the dummy variables for BrickConstruction and Neighborhood (enter as percent with two digits, no decimal places, no percent sign)?

87

43. What is the intercept (enter number with no decimals)?

22841

44. Is the intercept statistically significant (Yes or No)?

Yes

45. Which region (East, North, or West) has the highest price?

West

46. Which region (East, North, or West) has the lowest price?

East

47. Which type of construction (Brick or Not-Brick) has the highest price?

Brick

48. What is the price difference between Brick and Not-Brick (enter a positive number with no decimals)?

17297

49. What is the intercept for a Brick house in the West (enter number with no decimals)?

40138

50. What is the intercept for a Non-Brick house in the East (enter number with no decimals)?

599