Below are descriptive statistics and a correlation matrix for 3 variables—Y, X1, and X2—which were observed for 100 randomly selected individuals.

**X1 X2 Y Mean Variance**

**X1** 1.000 8.040 2.108

**X2** 0.350 1.000 6.112 4.103

**Y** 0.150 0.220 1.000 4.063 5.125

1. Report the prediction equation for the regression of Y on X1 and X2.
2. Interpret the values of a, b1, and b2
3. Compute and interpret the value of R2Y•X1X2
4. Test the hypothesis that 2Y•X1X2 equals zero. Use =0.05.
5. Test the hypothesis that 1 equals zero. Use =0.05.
6. Test the hypothesis that 2 equals zero. Use =0.05.
7. Report the zero-order correlation between X1 and Y. Then compute the partial correlation between X1 and Y after controlling for X2 and compare it to the zero-order correlation.