Starting with the data on the price of a related commodity for years 1986 to 2005 listed below, we have estimated the regression for the quantity demanded of a commodity (which we now label X), on the price of the commodity (which we now label PX), consumer income (which we now label Y), and the price of the related commodity (PZ), and we obtained the following results.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year Pz($) | 1986  14 | 1987  15 | 1988  15 | 1989  16 | 1990  17 |
| Year Pz($) | 1991  18 | 1992  17 | 1993  18 | 1994  19 | 1995  20 |
| Year Pz($) | 1996  20 | 1997  19 | 1998  21 | 1999  21 | 2000  22 |
| Year Pz($) | 2001  23 | 2002  23 | 2003  24 | 2004  25 | 2005  25 |

= 121.86 – 9.50*Px* + 0.04*Y* – 2.21*Pz*

(5.12) (2.18) (-0.68)

*R2* = 0.9633  *F* = 167.33 *D* – *W* = 2.38

Evaluate the above regression results in terms of the signs of the coefficients, the statistical significance of the coefficients and the explanatory power of the regression (R2). The number in parentheses below the estimated slope coefficients refer to the estimated t values. The rule of thumb for testing the significance of the coefficients is if the absolute t value is greater than 2, the coefficient is significant, which means the coefficient is significantly different from zero. For example, the absolute t value for Px is 5.12 which is greater than 2, therefore, the coefficient of Px, (-9.50) is significant. In other words, Px does affect Qx. If the price of the commodity X increases by $1, the quantity demanded (Qx) will decrease by 9.50 units. (*c*) X and Z are complementary or substitutes?