

*A2.S.8: Interpret within the linear regression model the value of the correlation coefficient as a measure of the strength of the relationship*

1. 060211b, P.I. A2.S.8

A linear regression equation of best fit between a student's attendance and the degree of success in school is  $h = 0.5x + 68.5$ . The correlation coefficient,  $r$ , for these data would be

- [A]  $r = 0$  [B]  $0 < r < 1$   
[C]  $-1 < r < 0$  [D]  $r = -1$

2. 060109b, P.I. A2.S.8

The relationship of a woman's shoe size and length of a woman's foot, in inches, is given in the accompanying table.

Woman's Shoe Size	5	6	7	8
Foot Length (in)	9.00	9.25	9.50	9.75

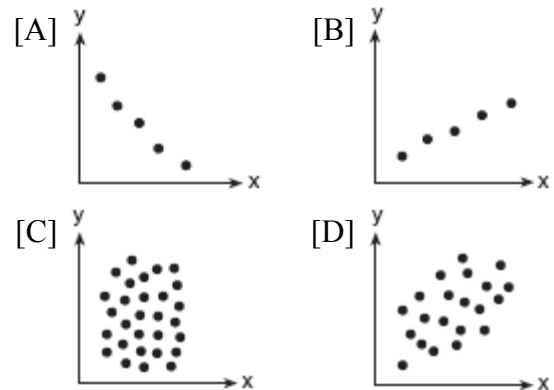
The linear correlation coefficient for this relationship is

- [A] 0 [B] 0.5 [C] -1 [D] 1

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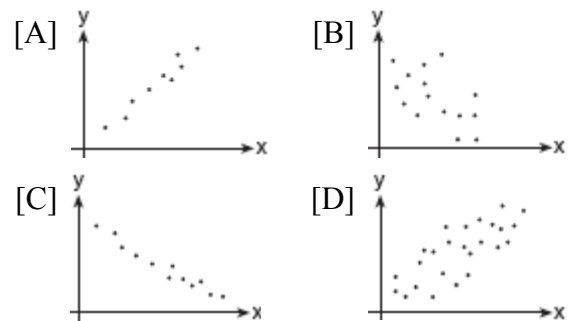
3. 010515b, P.I. A2.S.8

Which scatter diagram shows the strongest positive correlation?



4. 080306b, P.I. A2.S.8

Which graph represents data used in a linear regression that produces a correlation coefficient closest to  $-1$ ?

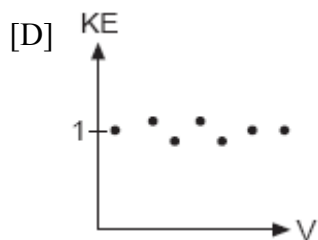
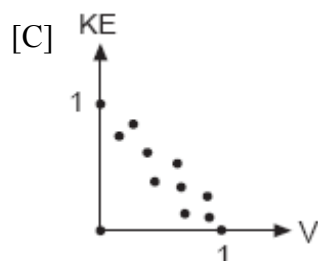
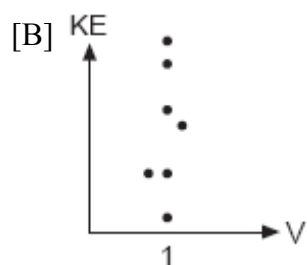
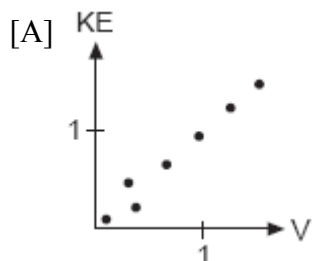


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5. 010816b, P.I. A2.S.8

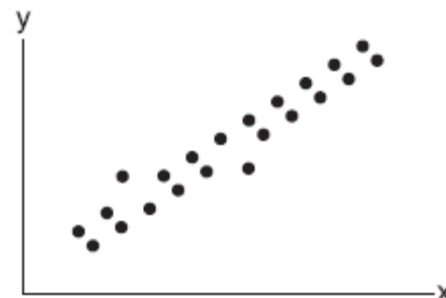
In the physics lab, Thelma determined the kinetic energy,  $KE$ , of an object at various velocities,  $V$ , and found the linear correlation coefficient between  $KE$  and  $V$  to be  $+0.8$ .

Which graph shows this relationship?



6. 060705b, P.I. A2.S.8

What could be the approximate value of the correlation coefficient for the accompanying scatter plot?



[A]  $-0.85$  [B]  $-0.16$  [C]  $0.90$  [D]  $0.21$

7. fall9910b, P.I. A2.S.8

The points in the scatter plot below represent the ages of automobiles and their values.

Based on this scatter plot, it would be reasonable to conclude:



- [A] Age and value have a coefficient of correlation that is equal to zero.
- [B] Age and value have a coefficient of correlation that is greater than 0.5.
- [C] Age and value have a coefficient of correlation that is less than zero.
- [D] Age and value have a coefficient of correlation that is between zero and 0.5.

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[1] B

[2] D

[3] B

[4] C

[5] A

[6] C

[7] C