

1A.7. Quadratic and Exponential Regression

10F2

For Example #1 and #2:

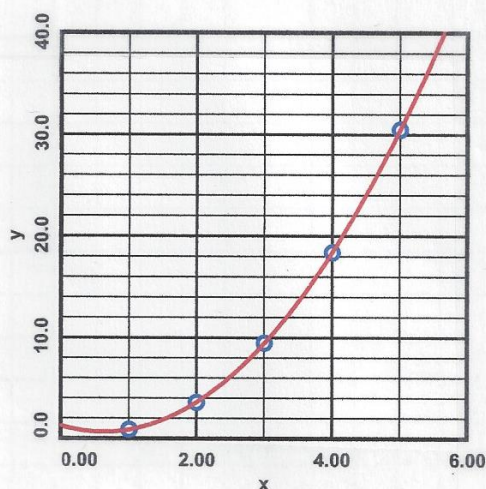
- (a) Graph the points in the table.
- (b) Find the quadratic regression equation and r^2 for the points.
- (c) Find the exponential regression equation and r^2 for the points.
- (d) Which equation, from (b) or (c), is more accurate? Why?
- (e) Graph the more accurate of the regression equations

Example #1.

Solution:

x	y
1	0.9
2	3.6
3	9.5
4	18.4
5	30.5

(a) (e)



(b) $y = 1.557x^2 - 1.943x + 1.280$
 $r^2 = 1.00000$

(c) $y = 0.521(2.382)^x$
 $r^2 = 0.96007$

- (d) The quadratic equation is more accurate, because r^2 is closer to 1.

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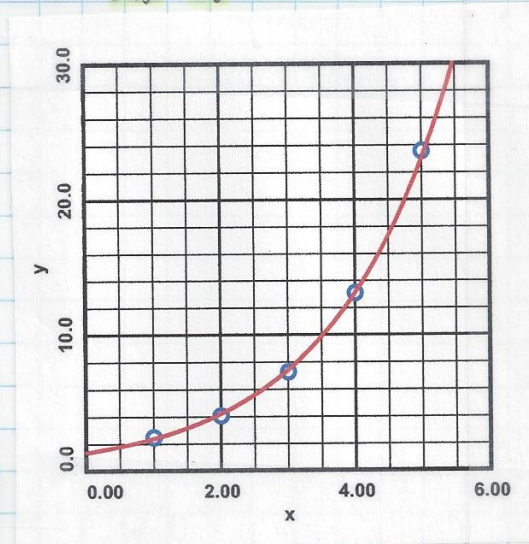
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Example #2,

SOLUTION:

x	y
1	2.5
2	4.1
3	7.3
4	13.1
5	23.6

(a) (e)



(b) $y = 1.457x^2 - 3.623x + 4.960$
 $r^2 = 0.9967$

(c) $y = 1.369(1.760)^x$
 $r^2 = 0.9989$

(d) The exponential equation is slightly more accurate because r^2 is slightly closer to 1.