

PRE-AP ALGEBRA 2

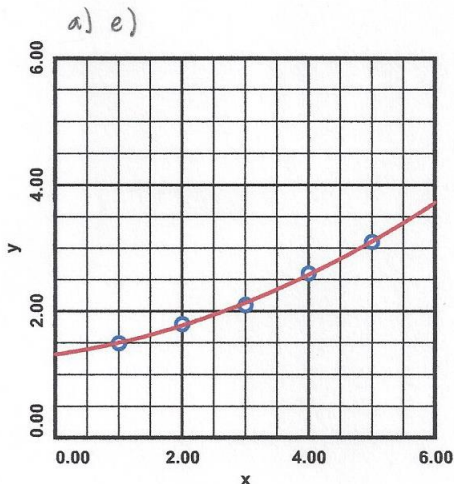
1A.7 CLASSWORK

For problems 1 and 2:

- graph the points in the table on the grid provided,
- find the quadratic regression equation and  $r^2$  for the points, and
- find the exponential regression equation and  $r^2$  for the points.
- Which regression equation is more accurate? Justify your answer.
- Graph the more accurate regression equation on the grid.

1)

x	y
1	1.5
2	1.8
3	2.1
4	2.6
5	3.1



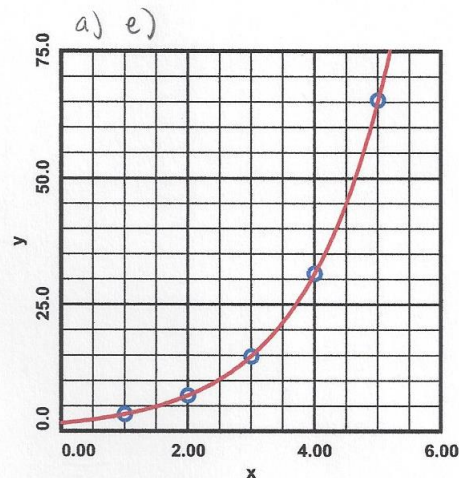
b)  $y = 0.043x^2 + 0.143x + 1.320$   
 $r^2 = 0.9986$

c)  $y = 1.244(1.200)^x$   
 $r^2 = 0.9980$

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

2)

x	y
1	3.4
2	7.1
3	14.8
4	31.1
5	65.4



b)  $y = 4.986x^2 - 15.114x + 14.860$   
 $r^2 = 0.99221$

c)  $y = 1.619(2.094)^x$   
 $r^2 = 1.00000$

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