TASK4

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x	Y
1	98
10	81
20	67
32	52
45	40
60	30

a. Plot the graph of x and y using any software, then put the graph in your paper.
b. Is it a straight line trend or an exponential trend? Explain.
c. Use appropriate regression to find the curve best fit (choose: line regression or exponential regression)
d. Find the standard deviation of error.

Exponential Regression

x	y	z=ln(y)	xz	x^2	f(x)	y - f(x)	[y - f(x)]^2
1	98	4.5850	4.5850	1.0000	97.5548	0.4452	0.1982
10	81	4.3944	43.9445	100.0000	81.4074	-0.4074	0.1660
20	67	4.2047	84.0939	400.0000	66.5806	0.4194	0.1759
32	52	3.9512	126.4398	1024.0000	52.3081	-0.3081	0.0949
45	40	3.6889	165.9996	2025.0000	40.2771	-0.2771	0.0768
60	30	3.4012	204.0718	3600.0000	29.7909	0.2091	0.0437
168	368	24.2254	629.135	7150	367.9189	0.0811	0.7555

x bar=	28.0000
z bar=	4.0376
b=	-0.0201
A=	4.6005
a=	99.5360
SD=	0.4346

Exponential Regression
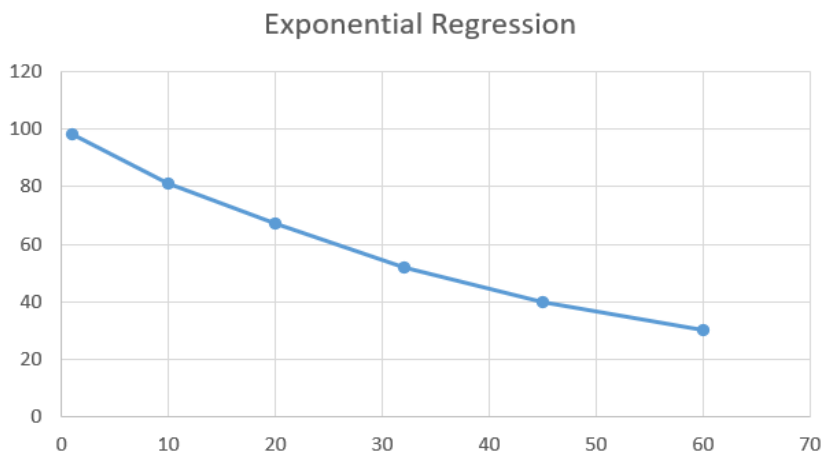
b). From the graph above, we can see that the data follows a roughly curved pattern that does not fit a straight line well. Therefore, it is an exponential regression to model the data.

c). Based on the data above, the exponential regression would provide a better fit than a line regression

d). $S = \sqrt{\dfrac{(98-97.5548)^2 + (81-81.4074)^2 + (67-66.5806)^2 + (52-52.3081)^2 + (40-40.2771)^2 + (30-29.7909)^2}{6-2}}$

$= 0.4346$