Key Quiz 2 - 17 - 09
another version

1-10	6	10	3	5	0.7	300
	$\overline{x}$	$\overline{y}$	s_x	s_y	r	n

1. slope of naive = 5/3 closest to (a) 1.7
2. slope of regr = 0.7 5/3 closest to (a) 1.7
3. fract s_y^2 accounted for by regr = $.7^2$ closest to (d) 0.5
4. r[6x+2, 3y-4] = r[x, y] = 0.7 = (d) 0.7
5. pred y for x = 9 (mean + one sd) is 10 + 0.7 5 = (a) 3.5.
6. pred y for x = 12 = 9 + 2 sd is 10+0.7 2 5 = 17 = (e).

7. est of μ_y when we know $\mu_x = 6$ is 10 (point on regr line for x = $\overline{x}$ = 6) = (b). In general, y (on rerg line) for any given x is

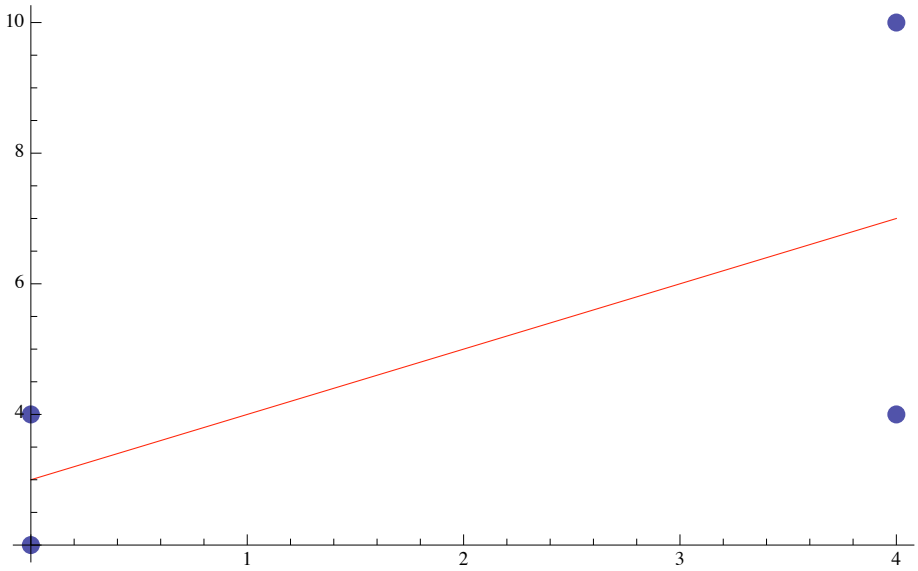
$$\overline{y} + (x - \overline{x})\, r\, s_y / s_x$$

8. For ELLIPTICAL plots the sd of y at every given x is $\sqrt{1 - r^2}\ s_y = \sqrt{1 - .7^2}\ 5$ = 3.57 closest to (a) 3.6.

9. NO (b) regression of x n y is not the same as regression oof y on x (usual, least sum of squares on vertical).

10. YES (a) r[x, y] = r[y, x].

11-12. (x, y) data (0,2), (0,4), (4,4), (4,10).



11. Slope rise/run = (7-3)/(4-0) = 1 = (a).
12. y-intercept = 3 = (c)

13-14. Data {2, 4, 5}.
13. s (sample sd = (n-1) divisor version of sd) = 1.52753 closest to (a) 1.5.
14. $\hat{\sigma}$ (n divisor version of sd) = 1.24722 closest to (b) 1.3.

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In[118]:= 3.5 / 3
Out[118]= 1.16667
In[119]:= Sqrt[1 - .49] 5
Out[119]= 3.57071
In[168]:= s[{2, 4, 5}]
Out[168]= 1.52753
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In[169]:=
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sd[{2, 4, 5}]
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Out[169]=
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1.24722
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