Exercises: Module 2

1. The following use the Witness data set.

Interpret each of the standardized coefficients from the following table:

Regression Coefficients

Dependent Variable: ACCURATE

	Unstandardized Coefficients		Standardized Coefficients		
	B	se	Beta	t	p
Intercept	-.065	.500		-.129	.897
The age of the witness in the fictitious trial (49, 69, 79, 89)	.006	.004	**.082**	1.546	.124
Perceived cognitive ability of the witness	.174	.064	**.175**	2.717	.007
Perceived honesty of the witness on a 7 point scale	.156	.071	**.130**	2.191	.030
Perceived memory of the witness on a 7 point scale	.480	.069	**.454**	6.980	.000
Amount of time participant spends with seniors at home on a 10 point scale	-.046	.025	**-.114**	-1.867	.063
Amount of time participant spends with seniors at school on a 10 point scale	.053	.025	**.125**	2.067	.040

b) What is the standardized intercept and why?

2. In the following regression, AGE_WITN is centered at 49 and the rest of the variables are centered at their means.

How do the results change when the predictors are centered? Are the p-values different? Are the unstandardized coefficients different? Interpret any unstandardized coefficients that changed.

Regression Coefficients

Dependent Variable: ACCURATE

Variable	Unstandardized Coefficients B	se	Standardized Coefficients Beta	t	p
Intercept	**4.093**	.115		35.697	.000
The age of the witness in the fictitious trial (49, 69, 79, 89)	.006	.004	.082	1.546	.124
Perceived cognitive ability of the witness	.174	.064	.175	2.717	.007
Perceived honesty of the witness on a 7 point scale	.156	.071	.130	2.191	.030
Perceived memory of the witness on a 7 point scale	.480	.069	.454	6.980	.000
Amount of time participant spends with seniors at home on a 10 point scale	-.046	.025	-.114	-1.867	.063
Amount of time participant spends with seniors at school on a 10 point scale	.053	.025	.125	2.067	.040

3. The following uses the Births data set.

This regression model regresses mother's delivery weight (del_wgt) on the number of prenatal medical visits (previs) and pre-pregnancy weight (pre_wgt). Interpret each regression coefficient.

Regression Coefficients

Dependent Variable: Mother's delivery weight

Variable	B	se	t	p
Intercept	39.644	1.966	20.160	.000
Number of prenatal visits	.340	.095	3.566	.000
Mother's pre-pregnancy weight	.914	.011	85.289	.000

As it turns out, both pre-pregnancy weight and delivery weight are quite skewed to the right. So I reran this regression model with a natural log transformation on both pre-pregnancy weight and delivery weight. Once again, interpret each regression coefficient.

Regression Coefficients

Dependent Variable: Natural log of mother's delivery weight

Variable	B	se	t	p	*Exp(B)*
Intercept	1.272	.049	25.988	.000	*3.568*
Number of prenatal visits	.002	.001	3.806	.000	***1.002***
Natural log of Mother's pre-pregnancy weight	**.779**	.010	79.596	.000	*2.179*