

Maternal Risk Factors for Low Birthweight

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Background

Low birthweight(<5.5 pounds) is a leading cause of infant mortality in the United States and can lead to debilitating and costly long-term health problems for infants who survive. Low birthweight is associated with cerebral palsy, deafness, blindness, epilepsy, chronic lung disease, learning disabilities, and attention deficit disorder.

The annual cost of low birthweight in 1988 was estimated at \$5.5 to \$6 billion; an updated estimate probably would be much higher.

Preliminary Study

The research about the risk factors which are associated with low birthweight has been done by others. Among those factors race, age, multiple birth and mother's health status play important role in the incidence of low birthweight.

Race. African-American mothers are two times more likely to have low birthweight than white mothers.

Age. Teen mothers (especially those younger than 15 years old) have a much higher risk of having a baby with low birthweight.

Multiple birth. Multiple birth babies are at increased risk for low birthweight because they often are premature. Over half of twins and other multiples have low birthweight.

Mother's health. Babies of mothers who are exposed to illicit drugs, alcohol, and cigarettes are more likely to have low birthweight. Mothers of lower socioeconomic status are also more likely to have poorer pregnancy nutrition, inadequate prenatal care, and pregnancy complications--all factors that can contribute to low birthweight.

Dataset

Google Big Query Public dataset---Natality: Describes all United States births registered in the 50 States, the District of Columbia, and New York City from 1969 to 2008. There are 31 variables and 137617070 observations. The data size is 21.9GB.

Table1.Variables in the Dataset

General	Infant	Mother	Mother Delivery History	Father
source_year	is_male	mother_residence_state	born_alive_alive	father_race
year	child_race	mother_race	born_alive_dead	father_age
month	weight_pounds	mother_age	born_dead	record_weight
day	plurality	gestation_weeks	ever_born	
wday	apgar_1min	Imp		
state	apgar_5min	mother_birth_state		
		Mother_married		
		cigarette_use		
		cigarettes_per_day		
		alcohol_use		
		drinks_per_week		
		weight_gain_pounds		

Objective and Method

Objective is to explore the impact of mother's age, ethnic, individual health status and delivery history on the Low birthweight(LBW) .

Method

1. Explanatory statistical analysis: Analysis of the incidence of LBW.
2. Statistic modeling:
 - Linear regression.
 - Variable select including step wise selection and exhaustive selection.
 - Binary logistic regression models for different study areas.

Result

-----Explanatory Analysis-----

The incidence of low birthweight was about 8% in 1968 and a little bit decrease to 7% until 1980. After 1980 it is slowly increased to more than 8% until 2008.

The percentage of low birthweight also varies from state to state. Among the 52 study area District of Columbia has highest percentage which is over 10%. The analysis of percentage of non-singleton shows DC is among the states which have high birth rate of twins or triplets. The African American mother's percentage in DC is 56.68% which is the highest in the 52 study areas.

Fig1. Percentage of LBW from 1968 to 2008

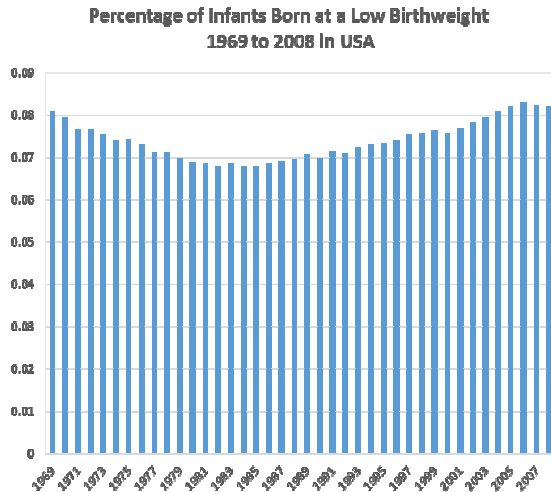


Fig2. Percentage of LBW in 52 study area

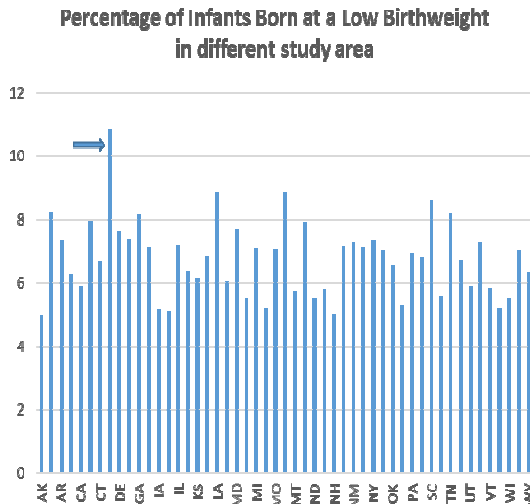


Fig3. Percentage of Non-Singleton in 52 study area

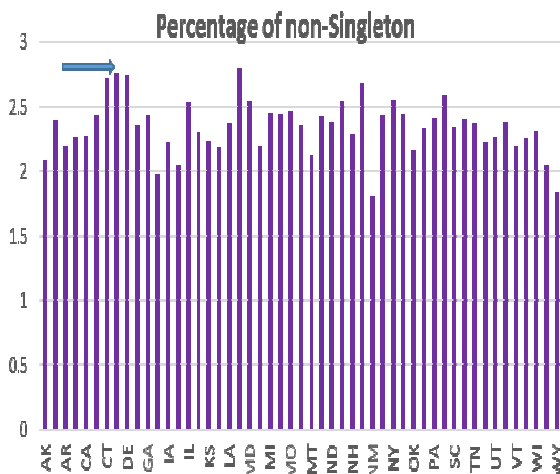
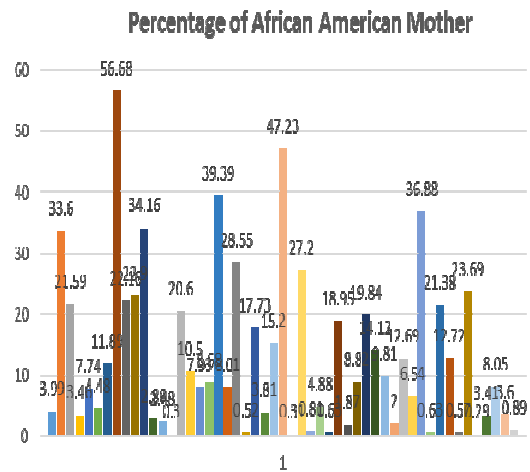


Fig4. Percentage of African American mother in 52 study area



Low birthweight incidence is higher in mothers who are African American, smoking or drinking, teenagers, mother over 40s, or mother having dead baby before. And low birth weight percentage is extremely high in mother whose gestation weeks is less than 32 weeks. Chi-square tests show baby birth weight has association with maternal factors mentioned above ($p < 0.001$).

Table2. Weight vs m_race

weight	M_race				
	White	Indian	Asian	Other	African-American
LBW	5967627(5.86%)	2610436(12.20%)	933225(7.50%)	30635(9.22%)	2535145(12.54%)
NBW	95880000(94.14%)	18782858(87.80%)	11510000(92.50%)	301575(90.78%)	17670000(87.46%)

Table3. Weight vs m_age

weight	m_age		
	<20	20-39	40+
LBW	1673413(9.17%)	7764808(6.63%)	211503(9.68%)
NBW	16580000(90.83%)	109400000(93.37%)	1974142(90.32%)

Table4. Weight vs cigar_use

weight	cigar_use	
	No	Yes
LBW	946960(7.52%)	173228(12.15%)
NBW	11650000(92.48%)	1252258(87.85%)

Table5. Weight vs alcohol_use

weight	alcohol_use	
	No	Yes
LBW	4115033(7.18%)	273060(12.26%)
NBW	53230000(92.82%)	1955001(87.74%)

Table6. Weight vs gestation_weeks

weight	gestation_weeks		
	<32W	32W-37W	>37W
LBW	2679375(34.12%)	4133532(31.09%)	2836817(2.57%)
NBW	5172469(65.88%)	15460000(78.91%)	107300000(97.43%)

Table7. Weight vs born_alive_dead

weight	born_alive_dead	
	0	>=1
LBW	9246353(6.9%)	403371(10.92%)
NBW	124700000(93.1%)	3290624(89.08%)

Table8. Weight vs born_dead

weight	born_dead	
	0	>=1
LBW	8902549(6.94%)	747175(8.01%)
NBW	119400000(93.06%)	8577437(91.99%)

Table9. Weight vs born_alive_alive

weight	born_alive_alive	
	0	>=1
LBW	4823407(7.43%)	4826317(6.64%)
NBW	60120000(92.57%)	67850000(93.36%)

Result

-----Statistic Modeling-----

Method

1. Building linear regression model using all risk factors/maternal risk factors.
2. Finding useful models by subset (exhaustive) selection and step wise selection.
3. Setting up binary logistic regression models for each study area.

Linear regression model

Response variable: weight_pounds (New born baby)

Independent variables: maternal /all risk factors

Dummy variables:

	Design Variables			
m_white	1	0	0	0
m_indian	0	1	0	0
m_asian	0	0	1	0
m_other	0	0	0	1
m_African_American	0	0	0	0

Primary linear regression model

1. Maternal factors model : $R^2 = 0.34$

Weight_pounds=3.472+0.0006*m_age+0.302*m_white
+0.536*m_indian+0.267*m_asian+0.154*m_other
-0.0002*cigar-0.0014*drinks+0.074*mother_married
+0.024*born_alive_alive-0.163*born_alive_dead
-0.014*born_dead+0.105*ever_born+0.252*gestation_weeks
+0.007*weight_gain_pounds

2. All factors model: $R^2 = 0.35$

Weight_pounds=-1.764+0.001*m_age+0.281*m_white
+0.497*m_indian+0.249*m_asian+0.149*m_other
-0.0002*cigar -0.0015*drinks+0.049*mother_married
+0.025*born_alive_alive+0.168*born_alive_dead
-0.016*born_dead+0.133*ever_born
+0.237*gestation_weeks+0.070*weight_gain_pounds
-1.28*plurality+0.279*gender-0.00017*f_white
+0.017*f_indian+0.086*f_Asian-0.042*f_other+0.006*f_age

Table10. Comparison of Maternal factors and All factors model

Weight_pounds =	M-model	All_model
Intercept	-3.472	-1.764
Mage	0.001	0.001
m_white	0.302	0.281
m_indian	0.536	0.497
m_Asian	0.267	0.249
m_other	0.154	0.149
Cigar	0	0
Drinks	-0.001	-0.002
Mother_married	0.074	0.049
Born_alive_alive	0.024	0.025
Born_alive_dead	-0.163	-0.168
born_dead	-0.014	-0.015
Ever_born	0.105	0.133
Gestationweeks	0.252	0.237
Weight_gain_pounds	0.007	0.007
Plurality		-1.28
Gender		0.279
F_white		0.017
F_indian		0.086
F_Asian		-0.042
F-other		0.006
fage		0

Variable selection

Response variable is still weight_pounds. Independent variables are maternal risk factors.

Table 11. Independent variables

m_white	m_indian	m_Asian	m_other	m_black	mage	Cigar	Drinks	Mother_married
x1	x2	x3	x4	x5	x6	x7	x8	x9
Born_alive_alive	Born_alive_dead	born_dead	Ever_born	Gestation_weeks	Weight_gain_pounds			
x10	x11	x12	x13	x14	x15			

1.Stepwise selection: Start with an empty model (no predictors) and then sequentially add variables to the model. Then add variables to model with criteria alpha-to-enter 0.15.

And remove variables from model with criteria alpha-to-out 0.15.

Table12. Stepwise selection regression models

Step		Partial R-Square	R-Square
1	x14	0.3167	0.3167
2	x14+x15	0.0093	0.326
3	x14+x15+x5	0.0069	0.3329
4	x14+x15+x5+x13	0.0017	0.3346
5	x14+x15+x5+x13+x2	0.0009	0.3355
6	x14+x15+x5+x13+x2+x11	0.0003	0.3358
7	x14+x15+x5+x13+x2+x11+x8	0.0002	0.336
8	x14+x15+x5+x13+x2+x11+x8+x6	0.0001	0.3361
9	x14+x15+x5+x13+x2+x11+x8+x6+x7	0	0.3361

2. Exhaustive selection is Choosing 4 variables from 15 maternal risk factors. There will be 1365 possible models. The best selection way is to explore when the variables increase to 5, 6, or 7 how R^2 changes.

Table13. Exhaustive selection regression models

```

mode: Y = x1 + x2 + x8 + x14;    R_square =0.3288396275    P_value =0
mode: Y = x1 + x2 + x7 + x14;    R_square =0.3122479556    P_value =0
mode: Y = x1 + x2 + x3 + x14;    R_square =0.3080939539    P_value =0
mode: Y = x1 + x2 + x10 + x14;   R_square =0.3101766817    P_value =0
mode: Y = x1 + x2 + x11 + x14;   R_square =0.3067123545    P_value =0
mode: Y = x1 + x2 + x13 + x14;   R_square =0.3066148683    P_value =0
mode: Y = x1 + x2 + x12 + x14;   R_square =0.3065636096    P_value =0
mode: Y = x1 + x2 + x14 + x15;   R_square =0.3023468089    P_value =0
mode: Y = x1 + x2 + x10 + x15;   R_square =0.0130336655    P_value =0
mode: Y = x1 + x2 + x11 + x15;   R_square =0.0124865997    P_value =0
mode: Y = x1 + x2 + x12 + x15;   R_square =0.0122568688    P_value =0
mode: Y = x1 + x2 + x11 + x13;   R_square =0.0105003492    P_value =0
mode: Y = x1 + x2 + x12 + x13;   R_square =0.0101737641    P_value =0
mode: Y = x1 + x2 + x13 + x15;   R_square =0.0104635783    P_value =0

```

Table14. Best selection regression models

Number in Model	R-Square	Variables in Model	Number in Model	R-Square	Variables in Model
2	0.3158	x7 x14	5	0.3352	x1 x6 x8 x14 x15
2	0.3154	x1 x14	5	0.3352	x1 x6 x9 x14 x15
2	0.3146	x5 x14	5	0.3338	x1 x8 x10 x14 x15
2	0.3142	x6 x14	5	0.3336	x1 x8 x13 x14 x15
2	0.3136	x8 x14	5	0.3335	x5 x6 x8 x14 x15
3	0.325	x1 x8 x14	6	0.3373	x1 x7 x8 x10 x14 x15
3	0.3238	x5 x8 x14	6	0.3372	x1 x6 x8 x10 x14 x15
3	0.3229	x1 x6 x14	6	0.3371	x1 x7 x8 x13 x14 x15
3	0.322	x1 x7 x14	7	0.3387	x1 x6 x7 x8 x10 x14 x15
4	0.3294	x1 x8 x10 x14	7	0.3385	x1 x6 x7 x8 x13 x14 x15
4	0.329	x1 x8 x14 x15	7	0.3378	x1 x2 x6 x8 x10 x14 x15
4	0.329	x5 x6 x8 x14			

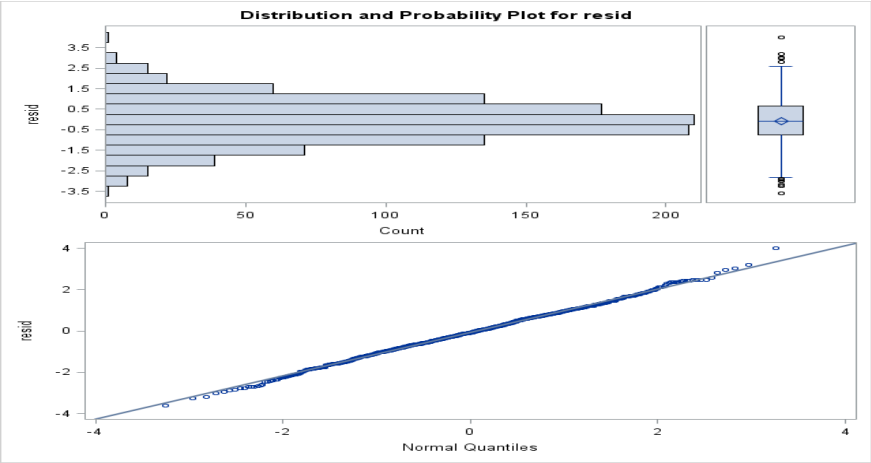
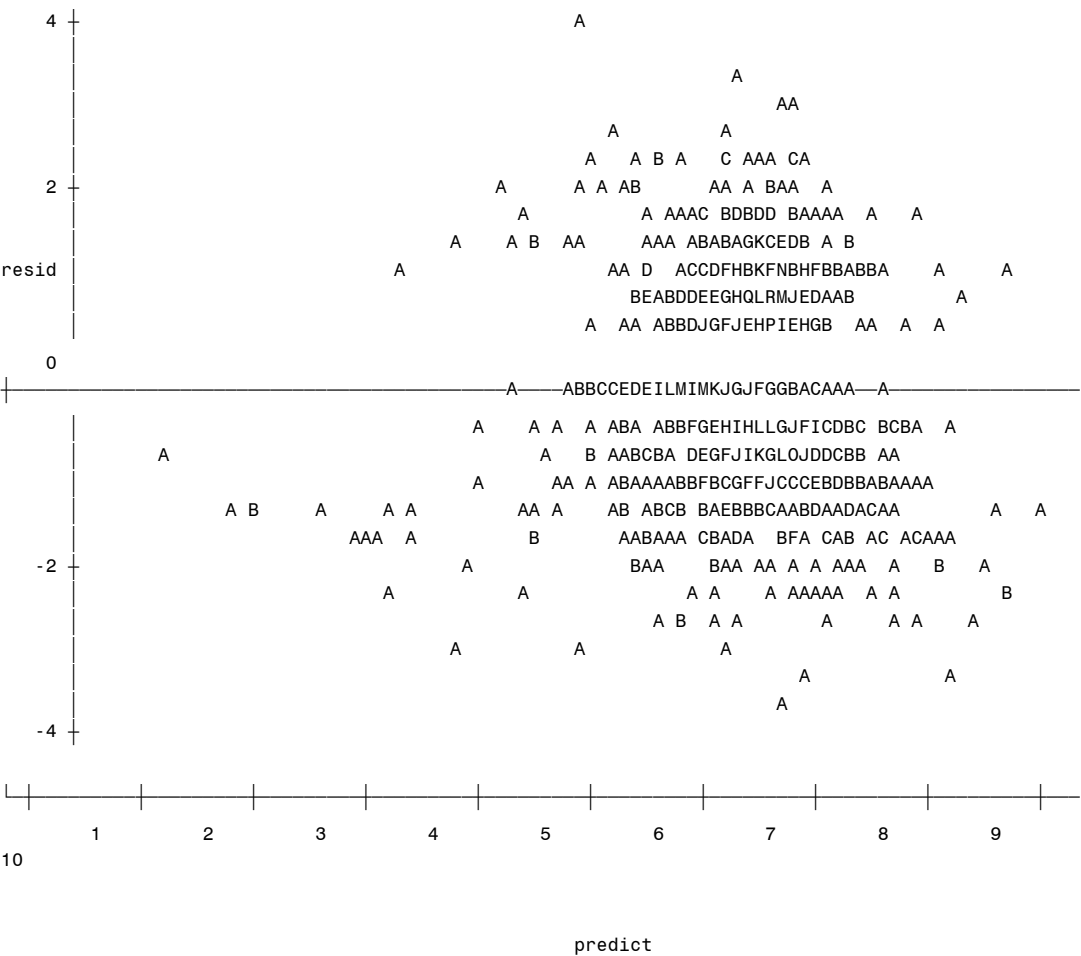
Exhaustive selection has set up 1365 significant linear regression models with 4 variables. Models including gestation weeks(x14) have R^2 ranging in 0.30 to 0.33, and the maternal model's R^2 is 0.34. Best selection shows that Increasing variable numbers to 5 or 6 results in minor increase of R^2 .

According to the stepwise selection results we set up the primary model. Response variable:weight_pounds (New born baby). And independent variables are gestation_weeks, m_African_American, weight_gain_pounds and ever_born. Model fit is:

$$\begin{aligned} \text{Weight_pounds} = & -3.350 - 0.361 * m_African_American \\ & + 0.223 * ever_born + 0.270 * gestation_weeks \\ & + 0.0019 * weight_gain_pounds \end{aligned}$$

Fig5. Model Assumption Checking

Plot of resid*predict. Legend: A = 1 obs, B = 2 obs, etc.



Primary regression model shows babies' born weight increase with mother's age; increase when mother is white/Indian/Asian, married, or have delivered living baby before. But babies' born weight decrease with lower gestation weeks; decrease when mother is African American, smoking, drinking alcohol, or have delivered dead baby before.

Step wise selection and exhaustive selection show 4 to 5 variables are good for the model building. Variable selection shows that independent variable gestation_weeks plays a big impact on responsible variable.

Logistic Regression Models

Explanatory statics shows the incidence of LBW differs from state to state. To set up 52 binary logistic regression models response variable: LBW=0

NBW=1

Predictors: Maternal risk factors.

Table15. Six states logistic regression model fit

State	CO	CT	DC	DE	FL	GA
Intercept	-2.1744	-2.5322	-1.6244	-2.796	-2.579	-2.6333
weight_gain_pounds	-0.0049	-0.0054	-0.0011	-0.0109	-0.0006	-0.0019
gw<32w	4.8867	6.329	4.9543	5.9747	5.0471	6.403
gw 32-37w	2.542	2.9182	2.4919	2.8119	2.4152	2.559
mother <20	-0.3955	-0.2286	-0.2093	-0.2185	-0.2925	-0.3028
mother in 20-39	-0.3318	-0.4164	-0.1896	-0.062	-0.2919	-0.3566
M_white	-0.3893	-0.3988	-0.3695	-0.3568	-0.4762	-0.5341
M_indian	-0.3031	-0.269	1.2912	0.6737	-0.4277	-0.0816
M_Asian	-0.214	-0.0646	-0.0303	0.0657	-0.2428	-0.1774
mother_married	0.0722	0.0933	0.095	0.2626	0.0969	0.138
Cigar(0)	-0.6173	-0.7241	-0.945	-0.5	-0.5427	-0.5583
born_alive_alive(0)	-0.043	0.0898	-0.2844	0.00164	0.2054	0.3053
born_alive_dead(0)	-0.2018	-0.1777	-0.7735	-0.2271	-0.1796	-0.1351
born_dead(0)	-0.0292	0.00124	-0.0417	-0.21	-0.0414	-0.0381
ever_born(0)	0.2843	0.1601	0.529	0.3266	0.0525	-0.0251

Table16. Six states logistic regression model odds ratio

State	CO	CT	DC	DE	FL	GA
weight_gain_pounds	0.995	0.995	0.999	0.989	0.999	0.998
gw<32w	132.519	560.608	141.78	393.348	155.57	603.674
gw in 32-37w	12.705	18.507	12.085	16.641	11.192	12.923
mother <20	0.673	0.796	0.811	0.804	0.746	0.739
mother in 20-39	0.718	0.659	0.827	0.94	0.747	0.7
M_white	0.678	0.671	0.691	0.7	0.621	0.586
M_indian	0.739	0.764	3.637	1.961	0.652	0.922
M_Asian	0.807	0.937	0.97	1.068	0.784	0.837
mother_married	1.075	1.098	1.1	1.3	1.102	1.148
cigar	0.539	0.485	0.389	0.607	0.581	0.572
born_alive_alive	0.958	1.094	0.752	1.002	1.228	1.357
born_alive_dead	0.817	0.837	0.461	0.797	0.836	0.874
born_dead	0.971	1.001	0.959	0.811	0.959	0.963
ever_born	1.329	1.174	1.697	1.386	1.054	0.975

Table17. Summary of logistic regression in 52 study area

Variables	Significant state(%)	Odds Ratio	
		Min	Max
gw<32w	100	31.248	603.674
gw in 32-37w	100	7.758	22.838
mother <20	72.91	0.416	0.857
mother in 20-39	79.17	0.376	0.848
M_white	87.5	0.4	0.88
M_indian	62.5	0.572	0.741
M_Asian	56.25	0.65	0.884
M_other	8.33	1.228	1.228
mother_married	52.08	1.042	1.3
Cigar(0)	100	0.389	0.756
born_alive_alive(0)	29.17	1.171	2.702
born_alive_dead(0)	56.25	0.461	0.852
born_dead(0)	47.92	0.811	1.093
ever_born(0)	10.42	0.455	1.811

Summary of binary logistic regression in 52 study areas U.S.A: Gestation weeks is a risk factor which is significant in all the study areas. Gestation weeks (<32 weeks) is about 31 to 603 times more possible to have a low birth weight baby than normal weeks. Mother (>40) is more possible to have low birth weight baby.

African America mother is more possible to have low birth weight baby than White/Indian/Asian mother. Cigarette use is a risk factor which is significant in all the study areas. Smoking mother has 1 to 2 times more possibility to have low birth weight baby.

Conclusions

1. Maternal risk factors for Low Birth Weight infants are African American race group, age over 40, smokers, alcohol drinkers and gestation weeks less than 37 weeks.
2. Gestation weeks are one of the most important risk factors.
3. Exhaustive way is a good method to get all the combinations of the useful models.

Appendix I Logistic regression model of 52 study area

Analysis of Maximum Likelihood Estimates for the full model

Analysis of Maximum Likelihood Estimates																	
State		AK	AL	AR	AZ	CO	CT	DC	DE	FL	GA	HI	IA	ID	IL	IN	KS
Parameter		Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Intercept		1.8972	0.456	2.2892	2.6198	1.3144	1.5821	1.9453	0.8793	2.3885	1.757	1.3927	3.1778	0.4576	2.2277	2.6781	4.3464
weight_ga		-0.0027	-0.02	0.00299	-0.0016	-0.0122	-0.0171	-0.0029	-0.0228	-0.0052	-0.0062	-0.003	-0.0279	0.00279	-0.0096	-0.0166	-0.0277
in_pounds																	
is_male	0	0.3272	0.2894	0.3173	0.2489	0.3486	0.3845	0.335	0.4228	0.3673	0.3722	0.2949	0.3151	0.273	0.3041	0.315	0.3666
pl	1	-0.415	-0.1859	-0.2585	-0.0287	-0.534	-0.8454	-0.8253	-0.3143	-0.823	-0.4341	-0.2924	-0.4787	-0.7641	-0.5393	-0.8939	-0.8103
pl	2	-1.9772	-2.4821	-1.8352	-2.8815	-1.1771	-1.859	-1.4828	-0.9282	-2.8895	-2.1428	-1.991	-2.8212	-1.3673	-2.2299	-2.3154	-3.5034
gw	1	4.8389	4.3486	4.6413	4.7957	4.8458	6.8823	4.8293	5.7617	4.9784	6.2273	4.5428	4.8727	4.8337	4.7654	4.7695	4.7876
gw	2	2.5925	1.9822	1.9982	2.1699	2.2982	2.8457	2.2638	2.5899	2.1797	2.334	2.3155	2.3798	2.3196	2.3990	2.1865	2.2977
mage	1	-0.7291	-0.2773	-0.4872	-0.3963	-0.1855	-0.2196	-0.2589	-0.8129	-0.2248	-0.2225	-0.8827	0.1127	-0.5703	-0.2932	-0.3323	-0.1817
mage	2	-0.4335	-0.2892	-0.3988	-0.3739	-0.1155	-0.3657	-0.1548	0.8966	-0.2271	-0.2751	-0.2914	0.1981	-0.6641	-0.2402	-0.3197	0.1140
mrace	1	-0.4847	-0.3554	-0.5825	-0.3211	-0.3457	-0.3474	-0.4287	-0.1834	-0.4488	-0.4992	-0.4358	-0.8173	-0.2797	-0.5536	-0.5894	-0.5617
mrace	2	-0.5794	-0.1696	-0.4446	-0.445	-0.1747	-0.377	0.3153	1.1798	-0.2982	-0.1152	-0.8794	-0.8842	-1.0324	-0.4781	-0.1046	-0.2655
mrace	3	-0.433	-0.1387	-0.4565	-0.8933	-0.1254	0.8358	-0.8259	0.1368	-0.2884	-0.1784	-0.2765	-0.2829	-0.257	-0.3024	-0.2939	-0.5898
mrace	4														-0.0341		
mother_m	0	0.9172	0.1545	0.8384	0.1182	0.1512	0.218	0.8992	0.2177	0.1849	0.1723	0.3368	0.1874	0.1392	0.1009	0.1604	0.063
armed																	
cigarette_use	0	-0.7111	-0.8922	-0.7896	-0.687	-0.7219	-0.874	-1.0472	-0.6615	-0.6658	-0.6882	-0.8482	-0.5974	-0.4931	-0.6888	-0.7178	-0.7699
alcohol_u	0	0	0	0	0	0	0	0	0	0	0	-0.3841	0	0	0	0	0
se																	
baa	0	0.1965	0.318	0.2319	0.2671	0.8945	0.2798	0.8332	0.8389	0.3396	0.3612	0	0.8978	0.9452	0.3083	0.6457	-0.1209
baa	0	-0.4754	-0.273	-0.4283	-0.408	-0.2814	-0.2287	-0.7423	-0.3839	-0.2489	-0.2818	0.8187	-0.4475	-0.3434	-0.4203	-0.2633	-0.2633
bid	0	-0.8922	-0.1684	-0.1445	-0.1399	-0.1396	0.9182	-0.1212	-0.1944	-0.9548	-0.8266	-0.3916	-0.1935	-0.8001	-0.1105	-0.0774	-0.103
ever_bom	0	0.4289	0.157	0.2394	0.1742	0.3345	0.2332	0.3947	0.5652	0.1381	0.1177	-0.2182	0.8921	-0.4249	0.1872	-0.1071	0.9922
frage	1	0.3886	-0.815	-0.8885	-0.8457	0.8388	0.8196	0.4551	-0.4826	-0.8165	0.8688	-0.1488	0.1132	0.3852	0.1424	0.0895	0.2965
frage	2	-0.8952	-0.8222	-0.1795	-0.1241	-0.8324	-0.8544	-0.8855	-0.8983	-0.8334	-0.8196	-0.8364	-0.8727	0.0258	-0.8446	-0.0084	0.8689
frage	1	-0.2682	-0.1238	-0.082	-0.1884	-0.1547	-0.2955	-0.1789	-0.5484	-0.1145	-0.1345	-0.8952	0.8502	0.2953	-0.1247	-0.0669	0.8898
frage	2	-0.2552	-0.1681	0.8951	0.89112	-0.1639	0.4794	2.1586	-1.7891	-0.1724	0.8733	0.3586	-0.1191	0.4971	0.2426	-0.0852	0.8689
frage	3	0.8516	-0.8143	-0.8893	-0.8445	-0.8751	-0.8851	0.8683	-0.2889	0.1588	0.8483	0.1629	0.1589	0.3418	0.038	-0.0011	8.1605
frage	4														0.1896		

Analysis of Maximum Likelihood Estimates for the full model

State	LA	MA	MD	ME	MI	MN	MO	MS	MT	NC	ND	NE	NH	NJ	NM
Parameter	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Intercept	2.2842	3.5215	1.5685	2.8496	14.2614	44.5987	0.9121	2.1851	3.4937	2.6327	2.3877	-0.2917	2.3706	0.1199	2.8221
weight_ga	-0.8889	-0.8882	-0.819	-0.8151	-0.8251	-0.8865	-0.8005	-0.8125	-0.8889	-0.819	-0.8127	-0.813	-0.8201	-0.8191	-0.818
in_pounds															
is_male	0.3989	0.3548	0.3282	0.2688	0.1991	0.3217	0.2921	0.3253	0.2982	0.2785	0.216	0.29	0.3365	0.286	0.3281
pl	-4.2861	-5.4196	-4.4938	-4.5943	-16.358	-46.871	-4.3758	-4.6146	-5.4408	-4.8268	-4.8268	-3.6919	-4.7648	-3.2362	-5.1491
pl	-1.8294	-2.8867	-2.1521	-2.6022	-14.401	0	-2.3287	-2.194	-2.8894	-2.1292	-2.3573	-1.2629	-2.2691	-0.8664	-1.4207
gw	4.3995	4.5426	5.5078	5.0948	4.9658	5.8342	5.6482	5.2115	4.3589	5.423	4.9981	5.5482	5.1872	5.8881	4.7827
gw	2.1944	1.9626	2.5696	2.292	2.8855	2.3226	2.6992	2.3982	2.8871	2.3983	2.3438	2.6762	2.42	2.8864	2.275
mage	-0.3441	-0.1152	-0.1048	-0.3689	-0.768	-0.3293	-0.1192	-0.2827	-0.3315	-0.2984	-0.2311	0.2448	-0.0494	-0.1487	-0.187
mage	-0.2482	-0.2117	-0.1327	-0.2265	-0.8666	-0.2785	-0.1328	-0.3177	-0.2685	-0.3389	-0.1888	0.1887	-0.1114	-0.3538	-0.1271
mrace	-0.4245	-0.3261	-0.1929	-0.4281	-0.2381	-0.5832	-0.5808	-0.4674	-0.9231	-0.4898	-0.2273	-0.4594	-0.288	-0.4273	-0.4
mrace	0.8395	-0.3793	-0.6163	-0.3724	-1.6631	-0.956	-0.6262	-0.6823	-0.7571	-1.334	-0.2438	-0.3136	-0.617	-0.1661	-0.8883
mrace	-0.4778	-0.1163	-0.0422	-0.1536	0.1282	-0.1188	-0.2101	-0.5162	-0.2881	-0.4878	-0.3811	0.3023	0.0076	-0.0441	-0.3114
mrace						-0.1158	0.3816								-0.8624
mother_m	-0.8535	0.2147	0.2746	0.0471	0.1764	0.1181	0.158	0.103	0.2854	0.1583	0.1482	0.1523	0.2438	0.8742	0.1114
armed															
cigarette_use	-0.7518	-0.8649	-0.7503	-0.8523	-0.7423	-0.6558	-0.5976	-0.7066	-0.7582	-0.6741	-0.8288	-0.7483	-0.6578	-0.9038	-0.6129
alcohol_use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
se															
baa	0.8941	0.2388	0.3061	0.4789	0.196	0.2779	0.3201	0.5321	0.5386	0.7952	0.5638	0.9016	-0.1073	-0.1543	0.6386
baa	-0.8577	-0.4951	-0.2101	-0.3055	0.8645	-0.5195	-0.1105	-0.3288	-0.4858	-0.2282	-0.3485	0.1595	-0.7124	-0.2121	-0.3488
bd	-0.8886	-0.1584	0.055	-0.103	-0.8358	-0.8938	-0.8748	-0.0186	-0.2196	-0.8421	-0.126	-0.0295	0.8697	-0.8834	-0.8939
ever_bom	0.4811	0.1373	0.2045	0.1034	0.4389	0.232	0.2481	0.0347	-0.8281	-0.3129	-0.8845	-0.3873	0.721	0.8873	-0.14
frage	0.8823	-0.8764	0.2083	0.1914	0.2325	0.8753	0.8717	0.8236	0.8797	-0.4388	0.1941	-0.0742	0.1291	0.3883	-0.8384
frage	0.8419	-0.1155	-0.0083	-0.0011	0.1388	0.9152	-0.0565	0.827	0.8438	-0.1444	0.8177	0.0625	-0.0694	0.8221	-0.8532
frage	-0.1574	-0.8888	-0.1889	-0.1543	0.88	-0.1682	0.0124	-0.0438	-0.8548	0.2531	-0.8863	-0.1974	-0.0255	0.317	-0.1689
frage	-0.1989	-0.119	-0.0883	0.2923	-0.5275	-0.312	-0.0005	-0.3072	0.8472	0.164	-0.8542	-0.1567	0.1481	1.4581	0.88544
frage	0.1422	-0.8783	0.00406	0.0899	0.1781	0.8423	0.2384	0.8887	0.8876	0.1415	0.8921	-0.1182	-0.0783	0.5135	0.8354
frage							0.3395	-0.2463							0.1612

Analysis of Maximum Likelihood Estimates for the full model

State	Parameter	IV Estimate	IV Estimate	OR Estimate	OR Estimate	RI Estimate	SC Estimate	SD Estimate	TN Estimate	TK Estimate	UT Estimate	VA Estimate	VT Estimate	WI Estimate	WV Estimate	WY Estimate
Intercept		1.072	1.6893	2.1837	3.8556	1.4804	0.7979	1.5407	2.4447	2.4838	2.209	47.494	14.612	2.2629	1.5051	1.7024
weight_gain		-0.0091	-0.011	-0.0129	-0.0173	-0.0168	-0.0023	-0.0147	-0.0287	-0.0854	-0.0068	-0.0129	-0.014	-0.0289	-0.0167	-0.0084
n_pounds																
la_sma		0.2097	0.3069	0.2818	0.2548	0.2788	0.2905	0.2906	0.2193	0.2341	0.2596	0.4223	0.2809	0.4766	0.3325	0.2147
pl		-5.4469	-4.3508	-3.3644	-3.2649	-4.004	-3.2372	-3.7994	-4.9565	-4.7167	-4.911	-48.754	-17.748	-3.399	-4.63	-4.0925
gw		-1.2837	-1.9907	-1.9584	-2.7257	-1.7425	-0.9135	-1.3131	-2.8448	-2.8888	-2.5344	0	-1.7781	-15.442	-2.2174	-1.7822
pl		4.3096	4.8447	4.9322	4.7247	5.5949	5.4348	4.816	4.9235	4.886	4.2026	5.8091	5.1512	5.5855	5.8031	4.7676
gw		2.2551	2.2852	2.2444	2.2832	2.6824	2.2829	2.8419	2.3041	2.3119	2.5457	2.5155	2.5889	2.446	2.2279	2.8803
la_sma		-0.4014	-0.1509	-0.222	-0.4188	-0.2069	-0.2212	-0.2246	-0.2448	-0.212	-0.2463	-0.1646	-0.1102	-0.1491	-0.1073	-0.0905
mage		-0.2465	-0.1057	-0.1718	-0.3973	-0.1248	-0.4101	-0.2551	-0.5316	-0.2651	-0.2921	-0.4163	-0.1537	-0.1251	-0.0384	-0.0845
mrace		-0.3446	-0.4102	-0.4852	-0.4454	-0.4706	-0.4385	-0.5093	-0.3167	-0.6536	-0.499	-0.3749	-0.384	-0.7221	-0.8795	-0.351
mrace		-0.2212	-0.7038	-0.6214	-0.6786	-0.4216	-0.617	-0.6223	-0.1897	-0.3794	-0.4054	-0.0295	-0.1821	-1.2528	-0.2296	-0.4528
mrace		-0.0652	-0.4567	-0.4837	-0.473	-1.1098	0.00918	-1.1329	0.2315	-0.4422	-0.2606	-0.1693	-0.2618	-0.3491	-0.4291	-0.0757
mother_marr		1.1172	0.1627	0.1382	0.2181	0.104	0.1224	0.1617	0.1243	0.09	0.135	0.204	0.1694	0.2182	0.1474	0.2067
cigarettes_u		-0.5046	-0.6943	-0.7281	-0.6475	-0.6525	-1.7473	-0.606	-0.8863	-0.8887	-0.6471	-6.2584	-6.6447	-1.8896	-0.6325	-0.8015
alcohol_us		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
baa		0.5241	0.43	0.5392	0.1937	0.1729	-0.4801	0.1285	-0.6424	0.7666	0.4901	0.5431	0.4106	0.0139	0.2338	-0.2126
bad		-0.3397	-0.3795	-0.2659	-0.338	-0.3246	-0.9758	-0.387	-0.521	-0.2289	-0.2923	-2.9053	-2.0083	-0.3438	-0.2554	-0.2502
over_bon		-0.135	-0.079	-0.0454	-0.041	0.00557	-0.016	-0.102	0.015	-0.0038	-0.1155	0.0166	-0.1889	-0.0778	-0.0358	-0.0599
over_bon		-0.0284	0.023	-0.196	0.381	0.3716	0.6552	0.318	1.3193	-0.2469	-0.5544	-0.068	0.011	0.399	0.282	0.6978
flag		0.0401	0.1171	0.0252	0.2442	0.0232	0.103	0.2761	0.2126	0.1934	0.1421	0.1609	-0.0994	0.15	0.1997	-0.2232
flag		-0.1016	-0.0709	-0.4442	-0.42	-0.3283	-0.076	0.0496	0.8945	-0.8715	-0.3054	0.8024	-0.5377	0.00159	0.8127	-0.2697
flag		-0.1904	-0.1014	-0.1986	-0.084	-0.2264	-0.1114	-0.1061	-0.0717	-0.0682	-0.0783	-0.225	0.3438	0.1165	0.144	-0.36
frace		0.081	0.2373	-0.1247	-0.1881	-0.2111	-0.4244	-1.079	-0.8453	-0.7283	-0.1337	-0.328	0.627	0.1314	0.1746	-1.1305
frace		0.0319	0.0152	0.08192	-0.3777	-0.1835	0.00749	0.0496	0.2851	-0.0871	0.0583	-0.1503	0.0125	0.2551	0.08928	0.0625
frace		0.1903	0.2373	0.199								-0.1452	-0.4152	0.0544		-0.0196

Odds Ratio in Full Model

date	Effect	AK	AL	AR	AZ	CO	CT	DC	DE	FL	GA	HI	IA	ID	IL	IN	KS	KY
		Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate
weight_gain	child	0.996	0.98	1.003	0.996	0.988	0.983	0.996	0.977	0.995	0.994	0.997	0.973	1.005	0.99	0.984	0.973	0.991
is_male	0 vs 1	1.387	1.306	1.373	1.283	1.406	1.469	1.384	1.526	1.444	1.451	1.343	1.37	1.214	1.355	1.37	1.443	1.358
pl1	vs 3	0.012	0.006	0.014	0.007	0.029	0.019	0.027	0.036	0.007	0.012	0.014	0.003	0.023	0.011	0.007	0.001	0.01
pl2	vs 2	0.138	0.083	0.16	0.065	0.308	0.156	0.227	0.238	0.068	0.117	0.137	0.054	0.257	0.108	0.099	0.02	0.161
gsw1	vs 3	125.321	75.751	183.603	118.575	196.25	438.049	125.127	317.894	131.162	506.379	93.955	138.698	162.891	117.134	116.341	144.486	81.45
gsw2	vs 3	12.363	7.258	7.317	7.757	10.675	12.541	9.619	13.864	8.843	10.319	10.43	10.803	18.162	11.021	3.012	9.951	0.971
mrage1	vs 3	0.467	0.788	0.696	0.736	0.831	0.81	0.772	0.907	0.799	0.8	0.921	1.119	0.965	0.746	0.717	1.12	0.788
mrage2	vs 3	0.648	0.749	0.571	0.688	0.8291	0.694	0.857	1.181	0.797	0.759	0.818	1.112	0.915	0.786	0.726	1.123	0.712
mrace1	vs 6	0.616	0.701	0.558	0.725	0.708	0.706	0.653	0.832	0.639	0.607	0.647	0.529	0.756	0.575	0.579	0.57	0.654
mrace2	vs 6	0.508	0.844	0.628	0.624	0.824	0.54	0.606	1.388	0.264	0.748	0.882	0.415	0.604	0.309	0.621	0.501	0.57
mrace3	vs 6	0.649	0.87	0.633	0.52	0.881	0.836	0.974	1.147	0.748	0.837	0.758	0.754	0.773	0.729	0.745	0.771	0.67
mrace4	vs 6														0.966			
mother_mame	d10 vs 1	1.017	1.167	1.039	1.125	1.163	1.244	1.104	1.243	1.111	1.188	1.4	1.113	1.149	1.105	1.174	1.065	0.948
ziparea	used 0 vs 1	0.491	0.5	0.496	0.545	0.495	0.417	0.381	0.516	0.514	0.587	0.983	0.55	0.611	0.506	0.468	0.463	0.472
ba0	vs 1	1.112	1.374	1.261	1.306	1.099	1.323	1.834	1.831	1.484	1.435	0.681	1.818	2.573	1.381	1.907	0.877	1.898
bd0	vs 1	0.622	0.689	0.644	0.632	0.755	0.796	0.476	0.881	0.778	0.77	2.288	0.639	0.709	0.667	0.769	0.88	0.57
bd0	vs 1	0.912	0.845	0.864	0.877	0.964	1.01	0.886	0.823	0.947	0.974	0.676	0.902	0.923	0.895	0.926	0.982	0.915
ever_born	0 vs 1	1.638	1.17	1.27	1.19	1.387	1.263	1.484	1.76	1.738	1.125	0.884	1.087	0.654	1.206	0.858	1.998	1.454
age1	vs 3	1.475	0.895	0.992	0.955	1.04	1.011	1.576	0.669	0.984	0.863	0.862	1.12	1.47	1.153	1.094	1.267	1.055
age2	vs 3	0.995	0.978	0.843	0.883	0.968	0.945	0.918	0.914	0.967	0.982	0.964	0.93	1.026	0.956	0.994	1.071	1.043
fract1	vs 6	0.705	0.884	0.912	0.904	0.857	0.814	0.843	0.758	0.892	0.874	0.969	1.051	1.3	0.883	0.935	0.986	0.854
fract2	vs 6	0.775	0.845	1	1.001	0.849	1.015	0.868	0.189	0.842	0.876	1.42	0.888	1.644	1.275	0.918	1.091	0.984
fract3	vs 6	1.053	0.898	0.991	0.956	0.828	0.918	0.862	0.77	1.163	1.051	1.177	1.163	1.407	1.039	0.999	1.174	1.153
fract4	vs 6												1.238		1.209			

Odds Ratio in Full Model

State	LA	MA	MD	ME	MI	MN	MO	MS	MT	NC	ND	NE	NH	NJ	NM	NV
Effect	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate
weight_gain_pounds	0.991	0.981	0.985	0.975	0.994	0.996	0.988	0.991	0.981	0.987	0.987	0.98	0.981	0.982	0.996	0.991
is_male0 vs 1	1.426	1.389	1.308	1.289	1.393	1.339	1.385	1.347	1.311	1.372	1.336	1.4	1.331	1.402	1.252	1.233
pl1 vs 3	0.004	0.011	0.007	<0.001	<0.001	0.013	0.01	0.004	0.01	0.008	0.026	0.008	0.039	0.006<0.001		0.004
pl2 vs 3	0.056	0.116	0.074<0.001			0.106	0.111	0.06	0.119	0.085	0.283	0.103	0.38	0.071<0.001		0.053
gw1 vs 3	22.531	261.849	162.183	135.865	152.579	256.763	183.373	78.014	226.559	146.354	256.754	178.959	270.466	118.243	59.08	74.489
gw2 vs 3	7.118	12.022	3.895	15.538	18.202	14.428	11.884	7.441	18.038	10.421	14.529	11.246	16.549	3.727	8.53	9.545
mage1 vs 3	0.891	0.901	0.891	0.464	0.719	0.888	0.754	0.718	0.748	0.794	1.277	0.952	0.78	0.829	0.796	0.889
mage2 vs 3	0.809	0.876	0.797	0.513	0.758	0.87	0.728	0.697	0.7	0.83	1.198	0.895	0.884	0.881	0.813	0.788
mrace1 vs 6	0.591	0.824	0.645	0.713	0.684	0.558	0.582	0.627	0.397	0.613	0.797	0.632	0.751	0.652	0.67	0.789
mrace2 vs 6	0.684	0.54	0.689	0.19	0.384	0.535	0.585	0.469	0.263	0.784	0.731	0.54	0.847	0.933	0.546	0.755
mrace3 vs 6	0.89	0.959	0.858	1.128	0.888	0.81	0.587	0.756	0.608	0.74	1.353	1.092	0.957	0.732	0.667	0.921
mrace4 vs 6					1.123	0.891	1.465							0.94		
mother_race0 vs 1	1.239	1.316	1.048	1.193		1.171	1.189	1.228	1.162	1.161	1.165	1.276	1.877	1.118	1.204	1.812
cigarette_use0 vs 1	0.514	0.472	0.426	0.476	0.519	0.55	0.465	0.47	0.51	0.44	0.475	0.518	0.485	0.542	0.474	0.884
bao0 vs 1	1.27	1.388	1.614	1.217	1.32	1.377	1.784	1.7	2.215	1.757	2.464	0.854	0.855	1.888	1.265	1.689
bad0 vs 1	0.667	0.81	0.737	0.867	0.595	0.9	0.714	0.666	0.796	0.782	1.173	0.49	0.889	0.705	0.968	0.719
bd0 vs 1	0.855	1.057	0.902	0.974	0.91	0.928	0.982	0.903	0.959	0.882	0.974	1.072	0.997	0.91	0.904	0.873
ever_born0 vs 1	1.147	1.227	1.109	1.529	1.261	1.279	1.825	0.971	0.731	0.996	0.679	2.057	2.242	0.869	1.142	0.972
face1 vs 3	0.926	1.232	1.211	1.282	1.078	0.969	1.824	1.083	0.661	1.167	0.928	1.138	1.489	0.962	0.952	1.841
face2 vs 3	0.891	0.992	0.922	1.15	1.015	0.945	1.827	1.094	0.666	1.818	1.065	0.933	1.822	0.948	0.942	0.989
face3 vs 6	0.922	0.828	0.857	1.883	0.852	1.013	0.957	0.947	1.208	0.917	0.821	0.975	1.373	0.851	0.807	0.82
face2 vs 6	0.888	0.915	1.34	0.58	0.732	1	0.735	1.048	1.178	0.947	0.895	1.157	4.382	1.006	0.873	0.83
face3 vs 6	0.925	1.004	1.094	1.195	1.043	1.267	1.894	1.092	1.152	1.896	0.888	0.925	1.871	1.036	0.916	1.832
face4 vs 6						1.299	0.782							1.175		

Odds Ratio in Full Model

State	NY	OH	OK	OR	RI	SC	SD	TN	TX	UT	VA	VT	WA	WV	WY
Effect	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate
weight_gain_pounds	0.989	0.987	0.983	0.983	0.988	0.985	0.98	0.985	0.985	0.987	0.988	0.979	0.983	0.992	0.982
is_male0 vs 1	1.368	1.352	1.426	1.322	1.485	1.383	1.376	1.387	1.291	1.525	1.348	1.594	1.394	1.37	1.584
pl1 vs 3	0.013	0.013	0.005	0.018	0.039	0.022	0.007	0.009	0.007<0.001		0.015<0.001		0.01	0.017	0.058
pl2 vs 3	0.149	0.141	0.095	0.175	0.491	0.369	0.086	0.181	0.079		0.168<0.001		0.199	0.178	
gw1 vs 3	127.067	141.483	112.701	268.047	229.179	122.868	377.478	129.881	80.881	369.756	169.213	385.88	148.87	107.486	27.526
gw2 vs 3	3.265	3.649	0.854	12.376	13.266	9.29	15.884	9.99	0.323	12.752	8.428	15.342	11.775	9.281	6.426
mage1 vs 3	0.86	0.891	0.603	0.751	0.725	0.723	0.868	0.732	0.796	0.834	0.848	0.883	0.858	1.112	0.546
mage2 vs 3	0.9	0.894	0.672	0.803	0.858	0.775	0.888	0.767	0.747	0.859	0.858	0.894	0.882	1.829	0.447
mrace1 vs 6	0.654	0.699	0.628	0.625	0.848	0.881	0.729	0.52	0.687	0.687	0.881	0.885	0.511	0.784	0.611
mrace2 vs 6	0.495	0.989	0.507	0.649	1.917	0.848	0.441	0.384	0.654	0.634	0.975<0.001		0.357	0.735	0.527
mrace3 vs 6	0.633	0.921	0.662	0.897	1.988	0.873	1.832	0.617	0.749	0.847	0.859	1.374	0.851	1.879	0.53
mrace4 vs 6	1.125	0.879	0.372						1.204	1.579	0.962			2.256	
mother_race0 vs 1	1.177	1.146	1.234	1.11	1.13	1.182	1.132	1.894	1.145	1.228	1.185	1.338	1.182	1.821	1.285
cigarette_use0 vs 1	0.515	0.483	0.523	0.521	0.474	0.584	0.448	0.445	0.524	0.523	0.525	0.336	0.521	0.449	0.388
bao0 vs 1	1.637	1.895	1.109	1.189	0.953	1.137	0.585	2.152	1.633	1.721	1.52	1.184	1.399	0.888	0.358
bad0 vs 1	0.796	0.744	0.722	0.716	0.583	0.786	0.718	0.795	0.747	0.767	0.812	0.92	0.746	0.676	0.55
bd0 vs 1	0.924	0.956	1.058	1.01	0.998	0.983	1.825	0.92	0.919	0.891	1.817	0.984	0.925	0.965	1.191
ever_born0 vs 1	1.023	0.899	1.435	1.46	1.822	1.374	3.787	0.77	0.846	0.934	1.874	1.48	1.339	2.889	3.956
face1 vs 3	1.124	1.026	1.277	1.023	1.189	1.318	1.387	1.189	1.153	1.18	0.985	0.887	1.231	0.8	1.472
face2 vs 3	0.932	0.953	0.988	0.961	1.079	1.841	1.191	0.927	1	1.886	0.963	1.886	1.886	0.811	1.581
face3 vs 6	0.904	0.896	0.918	0.797	0.895	0.851	1.848	0.927	0.988	0.684	0.798	1.438	0.856	1.899	0.898
face2 vs 6	1.288	0.803	0.83	0.81	0.654	0.34	0.956	0.88	0.875	0.72	1.684	2.137	1.191	0.878	0.738
face3 vs 6	1.015	1.002	0.983	0.832	1.888	1.881	1.33	0.993	1.86	0.86	1.813	1.291	1.889	1.864	0.98
face4 vs 6	1.21	1.346	1.451						0.865	0.86	1.886			0.528	

Analysis of Maximum Likelihood Estimates for the partial model

State Parameter	AK Estimate	AL Estimate	AR Estimate	AZ Estimate	CO Estimate	CT Estimate	DC Estimate	DE Estimate	FL Estimate	GA Estimate	HI Estimate	IA Estimate	ID Estimate	IL Estimate	IN Estimate	KS Estimate	
Intercept	-2.7147	-1.9874	-2.1255	-2.3852	-2.1744	-2.5322	-1.8244	-2.796	-2.579	-2.8333	-2.7912	-2.796	-3.1758	-2.3542	-2.3355	-2.3976	
weight_g ain_poun ds	7.9E-05	-0.012	0.00533	0.00113	-0.0049	-0.0054	-0.0011	-0.0109	-0.0006	-0.0019	-0.0007	-0.011	0.00717	-0.0037	-0.0075	-0.0131	
gw	1	4.9812	4.5452	4.8121	4.8275	4.8957	6.329	4.9543	5.9747	5.0471	6.403	4.6796	5.1905	4.9514	5.0277	5.0002	5.3213
gw	2	2.8924	2.2266	2.1906	2.4361	2.542	2.9182	2.4919	2.8119	2.4152	2.559	2.5214	2.7144	2.5842	2.674	2.4983	2.5963
mage	1	-0.6571	-0.2432	-0.3989	-0.505	-0.3955	-0.2286	-0.2093	-0.2195	-0.2925	-0.3028	-0.1801	-0.047	-0.8759	-0.3449	-0.3899	0.0179
mage	2	-0.5815	-0.2103	-0.4035	-0.502	-0.3318	-0.4164	-0.1896	-0.082	-0.2919	-0.3586	-0.2321	0.0187	-0.9786	-0.3085	-0.3679	0.0283
mrace	1	-0.4484	-0.3893	-0.6051	-0.3513	-0.3893	-0.3988	-0.3695	-0.3568	-0.4762	-0.5341	-0.4312	-0.562	0.0825	-0.5796	-0.5142	-0.5619
mrace	2	-0.5579	-0.1164	-0.5495	-0.4942	-0.3031	-0.269	1.2912	0.8737	-0.4277	-0.8816	-0.8658	-0.477	-0.7496	-0.4677	-0.1249	-0.5319
mrace	3	-0.4311	-0.0969	-0.5703	-0.1359	-0.214	-0.0646	-0.8303	0.0657	-0.2428	-0.1774	-0.2493	-0.363	0.2175	-0.3701	-0.3375	-0.2514
mrace	4										0.2488			0.0591			
mother_m arried	0	0.0792	0.1186	0.0638	0.0475	0.0722	0.0933	0.095	0.2626	0.0969	0.138	-0.0959	0.0414	0.1035	-0.013	0.0605	0.0338
cigarette_ use	0	-0.562	-0.5568	-0.6058	-0.5422	-0.6173	-0.7241	-0.945	-0.5427	-0.5983	-0.2793	-0.457	-0.4104	-0.5578	-0.5775	-0.6166	
alcohol_u se	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ban	0	-0.1125	0.2494	0.1579	0.3495	-0.043	0.0898	-0.2844	0.00164	0.2054	0.3053	0.7296	0.4855	1.0139	0.3187	0.4518	-0.2956
bad	0	-0.2901	-0.266	-0.3615	-0.379	-0.2018	-0.1777	-0.7735	-0.2271	-0.1796	-0.1351	-0.2825	-0.239	-0.0667	-0.3026	-0.1802	-0.2554
bd	0	-0.0168	-0.1474	-0.1148	-0.1263	-0.0292	0.00124	-0.0417	-0.21	-0.0414	-0.0381	-0.0214	-0.113	-0.1173	-0.1106	-0.0658	-0.0709
ever_born	0	0.3527	-0.00762	0.0998	-0.0094	0.2843	0.1601	0.529	0.3296	0.0525	-0.0251	-0.3231	-0.111	-0.6971	-0.0305	-0.1968	0.584

Analysis of Maximum Likelihood Estimates for the partial model

State Parameter	KY Estimate	LA Estimate	MA Estimate	MD Estimate	ME Estimate	MI Estimate	MN Estimate	MO Estimate	MS Estimate	MT Estimate	NC Estimate	ND Estimate	NE Estimate	NH Estimate	NJ Estimate	NM Estimate
Intercept	-2.1099	-2.0107	-3.0537	-2.2493	-3.1287	-2.2961	-3.4445	-2.8232	-1.9574	-1.9797	-2.5277	-4.1637	-2.6334	-3.1604	-2.4626	-2.3072
weight_ga in_poun ds	-0.0044	-0.0046	-0.0024	-0.006	-0.0133	-0.0009	-4E-05	-0.0055	-0.0049	-0.007	-0.0052	-0.0057	-0.0082	-0.0113	-0.0048	-0.0017
gw	4.6146	4.713	5.9587	5.2998	5.2183	5.2988	5.8046	5.4221	4.498	5.8675	5.2014	5.7958	5.5785	5.7643	5.0172	4.2593
gw 2	2.4358	2.1782	2.9734	2.5886	2.921	2.8028	3.0101	2.8758	2.1789	2.5987	2.5841	2.9974	2.7851	3.1284	2.8213	2.3273
mage	-0.2607	-0.097	-0.1545	-0.4681	-0.6491	-0.3472	-0.2105	-0.2901	-0.2536	-0.523	-0.2146	0.1357	-0.1363	-0.1547	-0.3623	-0.2999
mage	-0.2666	-0.1987	-0.2474	-0.3774	-0.5664	-0.2966	-0.2367	-0.3096	-0.2712	-0.4347	-0.1651	0.1573	-0.1811	-0.3353	-0.2785	-0.2688
mrace	-0.4383	-0.4758	-0.2034	-0.4492	-0.0458	-0.545	-0.5264	-0.4681	-0.4449	-0.9173	-0.4837	-0.1274	-0.387	-0.0636	-0.4621	-0.4454
mrace	-0.1479	-0.3694	-0.5556	-0.2685	-1.4215	-1.0333	-0.6103	-0.7088	-0.7922	-1.3628	-0.2994	-0.3091	-0.567	0.8218	-0.1038	-0.7097
mrace	-0.372	-0.1297	-0.0821	-0.1655	0.3413	-0.1231	-0.2358	-0.5124	-0.2186	-0.4305	-0.2811	0.2212	-0.073	0.0693	-0.3819	-0.4772
mrace							0.0414	0.0693							0.0244	
mother_m arried	-0.0049	0.1479	0.1086	0.0211	0.0476	0.0516	0.1472	0.0546	0.1848	0.1031	0.096	0.0415	0.0742	-0.0148	-0.038	0.1733
cigarette_ use	-0.6261	-0.5447	-0.5844	-0.7066	-0.5834	-0.5307	-0.4485	-0.6167	-0.6276	-0.5569	-0.6819	-0.6039	-0.4953	-0.7057	-0.4693	-0.6446
alcohol_u se	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ban	-0.0741	0.1821	0.1245	0.2361	0.4282	0.1588	0.268	0.4511	0.351	0.6781	0.4068	0.9839	-0.3013	-0.1975	0.5363	0.1501
bad	-0.4475	-0.3496	-0.2726	-0.2036	0.3058	-0.4583	0.00532	-0.167	-0.4001	-0.0766	-0.1911	0.2655	-0.5549	-0.0673	-0.2294	-0.004
bd	-0.1138	-0.1412	0.089	-0.0826	-0.0479	-0.0841	-0.0363	-0.0057	-0.1899	-0.0546	-0.0884	0.0138	0.0228	0.0477	-0.0601	-0.1191
ever_born	0.3324	0.00098	0.0641	0.0925	-0.1485	0.1128	0.00034	-0.1429	-0.0661	-0.4492	-0.0897	-0.787	0.6034	0.5552	-0.2908	0.07

Analysis of Maximum Likelihood Estimates for the partial model

State	NV	NY	OH	OK	OR	RI	SC	SD	TH	TX	UT	VA	VT	WI	WV	WY
Parameter	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Intercept	-2.436	-2.4413	-2.4407	-2.3486	-2.6437	-2.3114	-2.3056	-2.8661	-2.3289	-2.3319	-2.4466	-2.5704	-2.8808	-2.5174	-2.4412	-1.4488
weight_gain_pounds	-0.0041	-0.0035	-0.0054	-0.0103	-0.0077	-0.0001	-0.0087	-0.0107	-0.0021	-0.0031	-0.006	-0.0052	-0.0065	-0.0073	-0.0047	-0.0087
gw	4.5069	5.0832	5.2009	4.883	5.8835	5.5966	4.9781	6.1377	5.0717	4.5781	6.1116	5.3573	6.1612	5.2345	4.821	3.442
gw	2.5252	2.506	2.5468	2.429	2.9007	2.8198	2.4859	2.8623	2.5243	2.3624	2.7914	2.4064	2.9212	2.7591	2.4135	2.0487
mage	-0.4972	-0.2871	-0.2431	-0.3116	-0.5288	-0.3659	-0.3587	-0.4293	-0.3617	-0.3455	-0.3879	-0.2874	-0.2307	-0.3374	-0.1563	-0.2089
mage	-0.4101	-0.2496	-0.2414	-0.3224	-0.3316	-0.5145	-0.302	-0.3896	-0.3356	-0.3527	-0.287	-0.2504	-0.1218	-0.2726	-0.1678	-0.3889
mrace	-0.3958	-0.389	-0.4061	-0.4834	-0.5704	-0.3787	-0.5314	-0.099	-0.6288	-0.549	-0.5762	-0.456	-0.1178	-0.8069	-0.3004	-0.407
mrace	-0.3792	-0.6047	-0.0311	-0.7438	-0.5338	0.025	-0.7516	-0.8588	-1.0464	-0.4173	-0.7432	-0.0058	-12.109	-0.9698	-0.214	-0.5054
mrace	-0.1254	-0.4376	-0.1156	-0.4566	-0.3033	-0.0695	-0.1568	0.3139	-0.5183	-0.3208	-0.3126	-0.191	0.2552	-0.4329	0.1134	-0.3751
mrace	0.2058	0.1755	-0.6381							0.0607	0.0743	0.041			0.1162	
mother_married	-0.0023	0.0516	0.063	0.158	0.0375	-0.0539	0.1353	0.1192	0.0588	0.0983	0.1776	0.1586	0.1213	0.1342	0.0412	0.0707
cigarette_use	-0.3966	-0.5401	-0.5958	-0.5325	-0.529	-0.6473	-0.5374	-0.6999	-0.6721	-0.5634	-0.5255	-0.5322	-0.9141	-0.5068	-0.7242	-0.8764
alcohol_use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
baa	0.4265	0.3708	0.5293	0.0585	0.146	0.0291	0.0279	-0.3081	0.6378	0.53	0.4981	0.3684	0.4173	0.1488	-0.3596	-1.1598
bad	-0.2596	-0.2177	-0.1887	-0.2362	-0.206	-0.4327	-0.1527	-0.1971	-0.1135	-0.1904	-0.2345	-0.135	-0.2259	-0.315	-0.2798	-0.5374
bd	-0.1637	-0.0628	-0.0287	0.0612	0.0449	0.0792	-0.062	0.0323	-0.0456	-0.1078	-0.1205	0.0218	-0.0038	-0.092	-0.0206	0.0882
ever_born	-0.1278	-0.1451	-0.2526	0.2003	0.1633	0.3343	0.211	0.6958	-0.3667	-0.1791	-0.1654	-0.106	-0.1777	0.1991	0.6658	1.2848

Odds Ratio in Partial Model

State	AK	AL	AR	AZ	CO	CT	DC	DE	FL	GA	HI	IA	ID	IL	IN	KS
Effect	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate
weight_gain_pounds	1	0.988	1.005	1.001	0.995	0.995	0.999	0.989	0.999	0.998	0.999	0.989	1.007	0.996	0.993	0.987
gw 1 vs 3	145.654	94.178	122.888	138.033	132.519	588.608	141.78	383.348	155.57	603.674	187.295	179.56	142.8	152.577	148.44	204.647
gw 2 vs 3	18.036	9.269	8.941	11.428	12.795	18.507	12.885	16.641	11.192	12.923	12.446	15.096	13.253	14.488	12.053	13.414
mage 1 vs 3	0.518	0.784	0.672	0.694	0.673	0.796	0.811	0.804	0.746	0.739	0.835	0.904	0.416	0.708	0.677	1.818
mage 2 vs 3	0.559	0.81	0.668	0.695	0.718	0.659	0.827	0.94	0.747	0.7	0.793	1.019	0.376	0.735	0.892	1.829
mrace 1 vs 6	0.638	0.884	0.546	0.704	0.678	0.671	0.691	0.7	0.621	0.586	0.65	0.57	1.086	0.58	0.598	0.57
mrace 2 vs 6	0.572	0.89	0.577	0.61	0.739	0.764	0.637	1.961	0.652	0.922	0.504	0.621	0.473	0.626	0.883	0.587
mrace 3 vs 6	0.65	0.988	0.585	0.673	0.887	0.937	0.97	1.068	0.704	0.837	0.779	0.696	1.243	0.691	0.714	0.778
mrace 4 vs 6												1.283			1.961	
mother_married 0 vs 1	1.002	1.126	1.046	1.049	1.075	1.098	1.1	1.3	1.102	1.148	0.909	1.042	1.109	0.987	1.062	1.834
cigarette_use 0 vs 1	0.57	0.573	0.546	0.581	0.539	0.485	0.389	0.607	0.581	0.572	0.756	0.633	0.663	0.572	0.561	0.54
baa 0 vs 1	0.894	1.283	1.171	1.406	0.958	1.094	0.752	1.002	1.228	1.357	2.074	1.625	2.756	1.375	1.571	0.744
bad 0 vs 1	0.748	0.766	0.897	0.685	0.817	0.837	0.481	0.797	0.836	0.874	0.754	0.787	0.505	0.739	0.852	0.775
bd 0 vs 1	0.983	0.863	0.892	0.881	0.971	1.001	0.959	0.811	0.959	0.963	0.979	0.893	0.889	0.895	0.936	0.932
ever_born 0 vs 1	1.423	0.992	1.105	0.991	1.329	1.174	1.697	1.386	1.054	0.975	0.724	0.695	0.498	0.964	0.546	1.811

Odds Ratio in Partial Model

State	Effect	VT	LA	MA	ND	ME	NE	NH	MD	MS	MT	NC	NO	RI	NH	RI	MV
		Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate
weight_gain_pou	rdx	0.996	0.995	0.998	0.994	0.987	0.999	1	0.995	0.995	0.993	0.995	0.994	0.992	0.989	0.995	0.998
gw1 vs 3		100.948	111.389	387.183	288.293	184.625	199.696	331.828	226.343	89.84	289.383	181.524	328.916	264.136	318.723	158.992	70.759
gw2 vs 3		11.425	8.813	19.558	13.311	18.56	13.602	26.288	14.524	8.819	13.446	13.252	20.834	15.881	22.838	13.753	10.25
mage1 vs 3		0.771	0.908	0.857	0.626	0.522	0.707	0.81	0.748	0.776	0.593	0.807	1.145	0.873	0.857	0.696	0.741
mage2 vs 3		0.766	0.82	0.781	0.686	0.568	0.743	0.789	0.74	0.762	0.647	0.848	1.17	0.834	0.715	0.757	0.784
mrace1 vs 6		0.845	0.621	0.816	0.638	0.955	0.58	0.591	0.626	0.641	0.4	0.616	0.88	0.679	0.938	0.63	0.641
mrace2 vs 6		0.863	0.691	0.574	0.764	0.241	0.356	0.543	0.492	0.463	0.256	0.741	0.734	0.567	1.862	0.901	0.482
mrace3 vs 6		0.689	0.878	0.921	0.847	1.487	0.884	0.79	0.599	0.804	0.65	0.755	1.248	0.93	1.872	0.683	0.621
mrace4 vs 6								1.042	1.104							1.025	
mother_married	8 vs 1	0.995	1.159	1.115	1.021	1.849	1.053	1.159	1.096	1.203	1.189	1.101	1.842	1.077	0.985	0.963	1.189
cigarette_use0	vs 1	0.535	0.58	0.557	0.493	0.552	0.588	0.639	0.54	0.534	0.573	0.596	0.547	0.609	0.494	0.625	0.525
baa8 vs 1		0.929	1.2	1.133	1.266	1.535	1.172	1.307	1.57	1.42	1.97	1.502	2.782	0.74	0.821	1.71	1.162
bad0 vs 1		0.639	0.705	0.761	0.816	1.388	0.632	1.006	0.846	0.67	0.936	0.826	1.384	0.574	0.935	0.795	0.996
bd8 vs 1		0.893	0.868	1.893	0.921	0.953	0.919	0.964	0.994	0.827	0.947	0.917	1.814	1.023	1.848	0.942	0.888
ever_born0 vs 1		1.384	1.001	1.866	1.097	0.864	1.119	1	1.01	0.936	0.638	0.914	0.455	1.828	1.742	0.748	1.873

Odds Ratio in Partial Model

State	Effect	VT	LA	MA	ND	ME	NE	NH	MD	MS	MT	NC	NO	RI	NH	RI	MV
		Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate	Point Estimate
weight_gain_pou	rdx	0.996	0.995	0.998	0.994	0.987	0.999	1	0.995	0.995	0.993	0.995	0.994	0.992	0.989	0.995	0.998
gw1 vs 3		100.948	111.389	387.183	288.293	184.625	199.696	331.828	226.343	89.84	289.383	181.524	328.916	264.136	318.723	158.992	70.759
gw2 vs 3		11.425	8.813	19.558	13.311	18.56	13.602	26.288	14.524	8.819	13.446	13.252	20.834	15.881	22.838	13.753	10.25
mage1 vs 3		0.771	0.908	0.857	0.626	0.522	0.707	0.81	0.748	0.776	0.593	0.807	1.145	0.873	0.857	0.696	0.741
mage2 vs 3		0.766	0.82	0.781	0.686	0.568	0.743	0.789	0.74	0.762	0.647	0.848	1.17	0.834	0.715	0.757	0.784
mrace1 vs 6		0.845	0.621	0.816	0.638	0.955	0.58	0.591	0.626	0.641	0.4	0.616	0.88	0.679	0.938	0.63	0.641
mrace2 vs 6		0.863	0.691	0.574	0.764	0.241	0.356	0.543	0.492	0.463	0.256	0.741	0.734	0.567	1.862	0.901	0.482
mrace3 vs 6		0.689	0.878	0.921	0.847	1.487	0.884	0.79	0.599	0.804	0.65	0.755	1.248	0.93	1.872	0.683	0.621
mrace4 vs 6								1.042	1.104							1.025	
mother_married	8 vs 1	0.995	1.159	1.115	1.021	1.849	1.053	1.159	1.096	1.203	1.189	1.101	1.842	1.077	0.985	0.963	1.189
cigarette_use0	vs 1	0.535	0.58	0.557	0.493	0.552	0.588	0.639	0.54	0.534	0.573	0.596	0.547	0.609	0.494	0.625	0.525
baa8 vs 1		0.929	1.2	1.133	1.266	1.535	1.172	1.307	1.57	1.42	1.97	1.502	2.782	0.74	0.821	1.71	1.162
bad0 vs 1		0.639	0.705	0.761	0.816	1.388	0.632	1.006	0.846	0.67	0.936	0.826	1.384	0.574	0.935	0.795	0.996
bd8 vs 1		0.893	0.868	1.893	0.921	0.953	0.919	0.964	0.994	0.827	0.947	0.917	1.814	1.023	1.848	0.942	0.888
ever_born0 vs 1		1.384	1.001	1.866	1.097	0.864	1.119	1	1.01	0.936	0.638	0.914	0.455	1.828	1.742	0.748	1.873

Appendix II Exhaustive selection regression models

mode: $Y = x_1 + x_2 + x_3 + x_4$;	R_square =0.0129995313	P_value =0
mode: $Y = x_1 + x_2 + x_3 + x_5$;	R_square =0.0129995313	P_value =0
mode: $Y = x_1 + x_2 + x_3 + x_6$;	R_square =0.0163743631	P_value =0
mode: $Y = x_1 + x_2 + x_3 + x_7$;	R_square =0.0202232103	P_value =0
mode: $Y = x_1 + x_2 + x_3 + x_8$;	R_square =0.0331031533	P_value =0
mode: $Y = x_1 + x_2 + x_3 + x_9$;	R_square =0.0331031533	P_value =0
mode: $Y = x_1 + x_2 + x_3 + x_{10}$;	R_square =0.0172762168	P_value =0
mode: $Y = x_1 + x_2 + x_3 + x_{11}$;	R_square =0.0166183073	P_value =0
mode: $Y = x_1 + x_2 + x_3 + x_{12}$;	R_square =0.0164148171	P_value =0
mode: $Y = x_1 + x_2 + x_3 + x_{13}$;	R_square =0.0138014263	P_value =0
mode: $Y = x_1 + x_2 + x_3 + x_{14}$;	R_square =0.3080939539	P_value =0
mode: $Y = x_1 + x_2 + x_3 + x_{15}$;	R_square =0.0166324615	P_value =0
mode: $Y = x_1 + x_2 + x_4 + x_5$;	R_square =0.0129995313	P_value =0
mode: $Y = x_1 + x_2 + x_4 + x_6$;	R_square =0.009386882	P_value =0
mode: $Y = x_1 + x_2 + x_4 + x_7$;	R_square =0.0151718571	P_value =0
mode: $Y = x_1 + x_2 + x_4 + x_8$;	R_square =0.0293676843	P_value =0
mode: $Y = x_1 + x_2 + x_4 + x_9$;	R_square =0.0293676843	P_value =0
mode: $Y = x_1 + x_2 + x_4 + x_{10}$;	R_square =0.0098032911	P_value =0
mode: $Y = x_1 + x_2 + x_4 + x_{11}$;	R_square =0.0094416903	P_value =0
mode: $Y = x_1 + x_2 + x_4 + x_{12}$;	R_square =0.0092879509	P_value =0
mode: $Y = x_1 + x_2 + x_4 + x_{13}$;	R_square =0.0056778557	P_value =0
mode: $Y = x_1 + x_2 + x_4 + x_{14}$;	R_square =0.3043296649	P_value =0
mode: $Y = x_1 + x_2 + x_4 + x_{15}$;	R_square =0.0095144194	P_value =0
mode: $Y = x_1 + x_2 + x_5 + x_6$;	R_square =0.0163743631	P_value =0
mode: $Y = x_1 + x_2 + x_5 + x_7$;	R_square =0.0202232103	P_value =0
mode: $Y = x_1 + x_2 + x_5 + x_8$;	R_square =0.0331031533	P_value =0
mode: $Y = x_1 + x_2 + x_5 + x_9$;	R_square =0.0331031533	P_value =0
mode: $Y = x_1 + x_2 + x_5 + x_{10}$;	R_square =0.0172762168	P_value =0
mode: $Y = x_1 + x_2 + x_5 + x_{11}$;	R_square =0.0166183073	P_value =0
mode: $Y = x_1 + x_2 + x_5 + x_{12}$;	R_square =0.0164148171	P_value =0
mode: $Y = x_1 + x_2 + x_5 + x_{13}$;	R_square =0.0138014263	P_value =0
mode: $Y = x_1 + x_2 + x_5 + x_{14}$;	R_square =0.3080939539	P_value =0
mode: $Y = x_1 + x_2 + x_5 + x_{15}$;	R_square =0.0166324615	P_value =0
mode: $Y = x_1 + x_2 + x_6 + x_7$;	R_square =0.0158109677	P_value =0
mode: $Y = x_1 + x_2 + x_6 + x_8$;	R_square =0.0319937393	P_value =0
mode: $Y = x_1 + x_2 + x_6 + x_9$;	R_square =0.0319937393	P_value =0
mode: $Y = x_1 + x_2 + x_6 + x_{10}$;	R_square =0.0135015603	P_value =0
mode: $Y = x_1 + x_2 + x_6 + x_{11}$;	R_square =0.014094686	P_value =0
mode: $Y = x_1 + x_2 + x_6 + x_{12}$;	R_square =0.0144633103	P_value =0
mode: $Y = x_1 + x_2 + x_6 + x_{13}$;	R_square =0.0093897074	P_value =0

mode: Y = x1 + x2 + x6 + x14;	R_square =0.3118954681	P_value =0
mode: Y = x1 + x2 + x6 + x15;	R_square =0.0138367265	P_value =0
mode: Y = x1 + x2 + x7 + x8;	R_square =0.0342621583	P_value =0
mode: Y = x1 + x2 + x7 + x9;	R_square =0.0342621583	P_value =0
mode: Y = x1 + x2 + x7 + x10;	R_square =0.0190800391	P_value =0
mode: Y = x1 + x2 + x7 + x11;	R_square =0.0190385497	P_value =0
mode: Y = x1 + x2 + x7 + x12;	R_square =0.0189620188	P_value =0
mode: Y = x1 + x2 + x7 + x13;	R_square =0.0154221265	P_value =0
mode: Y = x1 + x2 + x7 + x14;	R_square =0.3122479556	P_value =0
mode: Y = x1 + x2 + x7 + x15;	R_square =0.0196067881	P_value =0
mode: Y = x1 + x2 + x8 + x9;	R_square =0.0293676843	P_value =0
mode: Y = x1 + x2 + x8 + x10;	R_square =0.033630166	P_value =0
mode: Y = x1 + x2 + x8 + x11;	R_square =0.0326688468	P_value =0
mode: Y = x1 + x2 + x8 + x12;	R_square =0.0322636145	P_value =0
mode: Y = x1 + x2 + x8 + x13;	R_square =0.0303823498	P_value =0
mode: Y = x1 + x2 + x8 + x14;	R_square =0.3288396275	P_value =0
mode: Y = x1 + x2 + x8 + x15;	R_square =0.0354652787	P_value =0
mode: Y = x1 + x2 + x9 + x10;	R_square =0.033630166	P_value =0
mode: Y = x1 + x2 + x9 + x11;	R_square =0.0326688468	P_value =0
mode: Y = x1 + x2 + x9 + x12;	R_square =0.0322636145	P_value =0
mode: Y = x1 + x2 + x9 + x13;	R_square =0.0303823498	P_value =0
mode: Y = x1 + x2 + x9 + x14;	R_square =0.3288396275	P_value =0
mode: Y = x1 + x2 + x9 + x15;	R_square =0.0354652787	P_value =0
mode: Y = x1 + x2 + x10 + x11;	R_square =0.0104811249	P_value =0
mode: Y = x1 + x2 + x10 + x12;	R_square =0.0104199575	P_value =0
mode: Y = x1 + x2 + x10 + x13;	R_square =0.0105003492	P_value =0
mode: Y = x1 + x2 + x10 + x14;	R_square =0.3101766817	P_value =0
mode: Y = x1 + x2 + x10 + x15;	R_square =0.0130336655	P_value =0
mode: Y = x1 + x2 + x11 + x12;	R_square =0.0097964347	P_value =0
mode: Y = x1 + x2 + x11 + x13;	R_square =0.0105003492	P_value =0
mode: Y = x1 + x2 + x11 + x14;	R_square =0.3067123545	P_value =0
mode: Y = x1 + x2 + x11 + x15;	R_square =0.0124865997	P_value =0
mode: Y = x1 + x2 + x12 + x13;	R_square =0.0101737641	P_value =0
mode: Y = x1 + x2 + x12 + x14;	R_square =0.3065636096	P_value =0
mode: Y = x1 + x2 + x12 + x15;	R_square =0.0122568688	P_value =0
mode: Y = x1 + x2 + x13 + x14;	R_square =0.3066148683	P_value =0
mode: Y = x1 + x2 + x13 + x15;	R_square =0.0104635783	P_value =0
mode: Y = x1 + x2 + x14 + x15;	R_square =0.3023468089	P_value =0
mode: Y = x1 + x3 + x4 + x5;	R_square =0.0129995313	P_value =0
mode: Y = x1 + x3 + x4 + x6;	R_square =0.0155513506	P_value =0
mode: Y = x1 + x3 + x4 + x7;	R_square =0.0196384027	P_value =0
mode: Y = x1 + x3 + x4 + x8;	R_square =0.0313977226	P_value =0

mode: $Y = x_1 + x_3 + x_4 + x_9$;	R_square =0.0313977226	P_value =0
mode: $Y = x_1 + x_3 + x_4 + x_{10}$;	R_square =0.0162038716	P_value =0
mode: $Y = x_1 + x_3 + x_4 + x_{11}$;	R_square =0.0155789587	P_value =0
mode: $Y = x_1 + x_3 + x_4 + x_{12}$;	R_square =0.0153937334	P_value =0
mode: $Y = x_1 + x_3 + x_4 + x_{13}$;	R_square =0.0128846046	P_value =0
mode: $Y = x_1 + x_3 + x_4 + x_{14}$;	R_square =0.3077609878	P_value =0
mode: $Y = x_1 + x_3 + x_4 + x_{15}$;	R_square =0.0158202609	P_value =0
mode: $Y = x_1 + x_3 + x_5 + x_6$;	R_square =0.0163743631	P_value =0
mode: $Y = x_1 + x_3 + x_5 + x_7$;	R_square =0.0202232103	P_value =0
mode: $Y = x_1 + x_3 + x_5 + x_8$;	R_square =0.0331031533	P_value =0
mode: $Y = x_1 + x_3 + x_5 + x_9$;	R_square =0.0331031533	P_value =0
mode: $Y = x_1 + x_3 + x_5 + x_{10}$;	R_square =0.0172762168	P_value =0
mode: $Y = x_1 + x_3 + x_5 + x_{11}$;	R_square =0.0166183073	P_value =0
mode: $Y = x_1 + x_3 + x_5 + x_{12}$;	R_square =0.0164148171	P_value =0
mode: $Y = x_1 + x_3 + x_5 + x_{13}$;	R_square =0.0138014263	P_value =0
mode: $Y = x_1 + x_3 + x_5 + x_{14}$;	R_square =0.3080939539	P_value =0
mode: $Y = x_1 + x_3 + x_5 + x_{15}$;	R_square =0.0166324615	P_value =0
mode: $Y = x_1 + x_3 + x_6 + x_7$;	R_square =0.0202459136	P_value =0
mode: $Y = x_1 + x_3 + x_6 + x_8$;	R_square =0.0334549192	P_value =0
mode: $Y = x_1 + x_3 + x_6 + x_9$;	R_square =0.0334549192	P_value =0
mode: $Y = x_1 + x_3 + x_6 + x_{10}$;	R_square =0.0188847705	P_value =0
mode: $Y = x_1 + x_3 + x_6 + x_{11}$;	R_square =0.0192837441	P_value =0
mode: $Y = x_1 + x_3 + x_6 + x_{12}$;	R_square =0.0195179028	P_value =0
mode: $Y = x_1 + x_3 + x_6 + x_{13}$;	R_square =0.0156482568	P_value =0
mode: $Y = x_1 + x_3 + x_6 + x_{14}$;	R_square =0.3145184174	P_value =0
mode: $Y = x_1 + x_3 + x_6 + x_{15}$;	R_square =0.0193118576	P_value =0
mode: $Y = x_1 + x_3 + x_7 + x_8$;	R_square =0.0351479486	P_value =0
mode: $Y = x_1 + x_3 + x_7 + x_9$;	R_square =0.0351479486	P_value =0
mode: $Y = x_1 + x_3 + x_7 + x_{10}$;	R_square =0.0229101942	P_value =0
mode: $Y = x_1 + x_3 + x_7 + x_{11}$;	R_square =0.0226555464	P_value =0
mode: $Y = x_1 + x_3 + x_7 + x_{12}$;	R_square =0.0225385948	P_value =0
mode: $Y = x_1 + x_3 + x_7 + x_{13}$;	R_square =0.0200452681	P_value =0
mode: $Y = x_1 + x_3 + x_7 + x_{14}$;	R_square =0.3141210761	P_value =0
mode: $Y = x_1 + x_3 + x_7 + x_{15}$;	R_square =0.0234798127	P_value =0
mode: $Y = x_1 + x_3 + x_8 + x_9$;	R_square =0.0313977226	P_value =0
mode: $Y = x_1 + x_3 + x_8 + x_{10}$;	R_square =0.0332470004	P_value =0
mode: $Y = x_1 + x_3 + x_8 + x_{11}$;	R_square =0.0321711244	P_value =0
mode: $Y = x_1 + x_3 + x_8 + x_{12}$;	R_square =0.0317776191	P_value =0
mode: $Y = x_1 + x_3 + x_8 + x_{13}$;	R_square =0.0325236839	P_value =0
mode: $Y = x_1 + x_3 + x_8 + x_{14}$;	R_square =0.3293885097	P_value =0
mode: $Y = x_1 + x_3 + x_8 + x_{15}$;	R_square =0.0372796076	P_value =0
mode: $Y = x_1 + x_3 + x_9 + x_{10}$;	R_square =0.0332470004	P_value =0

mode: $Y = x_1 + x_3 + x_9 + x_{11}$;	R_square =0.0321711244	P_value =0
mode: $Y = x_1 + x_3 + x_9 + x_{12}$;	R_square =0.0317776191	P_value =0
mode: $Y = x_1 + x_3 + x_9 + x_{13}$;	R_square =0.0325236839	P_value =0
mode: $Y = x_1 + x_3 + x_9 + x_{14}$;	R_square =0.3293885097	P_value =0
mode: $Y = x_1 + x_3 + x_9 + x_{15}$;	R_square =0.0372796076	P_value =0
mode: $Y = x_1 + x_3 + x_{10} + x_{11}$;	R_square =0.0168369297	P_value =0
mode: $Y = x_1 + x_3 + x_{10} + x_{12}$;	R_square =0.0167407511	P_value =0
mode: $Y = x_1 + x_3 + x_{10} + x_{13}$;	R_square =0.0168546443	P_value =0
mode: $Y = x_1 + x_3 + x_{10} + x_{14}$;	R_square =0.3134219946	P_value =0
mode: $Y = x_1 + x_3 + x_{10} + x_{15}$;	R_square =0.0191176022	P_value =0
mode: $Y = x_1 + x_3 + x_{11} + x_{12}$;	R_square =0.0158535958	P_value =0
mode: $Y = x_1 + x_3 + x_{11} + x_{13}$;	R_square =0.0168546443	P_value =0
mode: $Y = x_1 + x_3 + x_{11} + x_{14}$;	R_square =0.3096866694	P_value =0
mode: $Y = x_1 + x_3 + x_{11} + x_{15}$;	R_square =0.0183087907	P_value =0
mode: $Y = x_1 + x_3 + x_{12} + x_{13}$;	R_square =0.0164756507	P_value =0
mode: $Y = x_1 + x_3 + x_{12} + x_{14}$;	R_square =0.3095537641	P_value =0
mode: $Y = x_1 + x_3 + x_{12} + x_{15}$;	R_square =0.018064547	P_value =0
mode: $Y = x_1 + x_3 + x_{13} + x_{14}$;	R_square =0.3102670204	P_value =0
mode: $Y = x_1 + x_3 + x_{13} + x_{15}$;	R_square =0.0169538945	P_value =0
mode: $Y = x_1 + x_3 + x_{14} + x_{15}$;	R_square =0.3054572932	P_value =0
mode: $Y = x_1 + x_4 + x_5 + x_6$;	R_square =0.0163609968	P_value =0
mode: $Y = x_1 + x_4 + x_5 + x_7$;	R_square =0.0202094665	P_value =0
mode: $Y = x_1 + x_4 + x_5 + x_8$;	R_square =0.0330952234	P_value =0
mode: $Y = x_1 + x_4 + x_5 + x_9$;	R_square =0.0330952234	P_value =0
mode: $Y = x_1 + x_4 + x_5 + x_{10}$;	R_square =0.0172561672	P_value =0
mode: $Y = x_1 + x_4 + x_5 + x_{11}$;	R_square =0.0166005585	P_value =0
mode: $Y = x_1 + x_4 + x_5 + x_{12}$;	R_square =0.0163955288	P_value =0
mode: $Y = x_1 + x_4 + x_5 + x_{13}$;	R_square =0.0137807647	P_value =0
mode: $Y = x_1 + x_4 + x_5 + x_{14}$;	R_square =0.3080631655	P_value =0
mode: $Y = x_1 + x_4 + x_5 + x_{15}$;	R_square =0.0166139646	P_value =0
mode: $Y = x_1 + x_4 + x_6 + x_7$;	R_square =0.0158076906	P_value =0
mode: $Y = x_1 + x_4 + x_6 + x_8$;	R_square =0.0310596068	P_value =0
mode: $Y = x_1 + x_4 + x_6 + x_9$;	R_square =0.0310596068	P_value =0
mode: $Y = x_1 + x_4 + x_6 + x_{10}$;	R_square =0.013424661	P_value =0
mode: $Y = x_1 + x_4 + x_6 + x_{11}$;	R_square =0.0140172072	P_value =0
mode: $Y = x_1 + x_4 + x_6 + x_{12}$;	R_square =0.0143925669	P_value =0
mode: $Y = x_1 + x_4 + x_6 + x_{13}$;	R_square =0.009383063	P_value =0
mode: $Y = x_1 + x_4 + x_6 + x_{14}$;	R_square =0.3118952143	P_value =0
mode: $Y = x_1 + x_4 + x_6 + x_{15}$;	R_square =0.0138308652	P_value =0
mode: $Y = x_1 + x_4 + x_7 + x_8$;	R_square =0.033500297	P_value =0
mode: $Y = x_1 + x_4 + x_7 + x_9$;	R_square =0.033500297	P_value =0
mode: $Y = x_1 + x_4 + x_7 + x_{10}$;	R_square =0.0190320215	P_value =0

mode: Y = x1 + x4 + x7 + x11;	R_square =0.0189906947	P_value =0
mode: Y = x1 + x4 + x7 + x12;	R_square =0.0189179549	P_value =0
mode: Y = x1 + x4 + x7 + x13;	R_square =0.0154197339	P_value =0
mode: Y = x1 + x4 + x7 + x14;	R_square =0.3122455087	P_value =0
mode: Y = x1 + x4 + x7 + x15;	R_square =0.0196049005	P_value =0
mode: Y = x1 + x4 + x8 + x9;	R_square =0.0284187808	P_value =0
mode: Y = x1 + x4 + x8 + x10;	R_square =0.0323427325	P_value =0
mode: Y = x1 + x4 + x8 + x11;	R_square =0.0313873403	P_value =0
mode: Y = x1 + x4 + x8 + x12;	R_square =0.0309936914	P_value =0
mode: Y = x1 + x4 + x8 + x13;	R_square =0.0294245987	P_value =0
mode: Y = x1 + x4 + x8 + x14;	R_square =0.3284311507	P_value =0
mode: Y = x1 + x4 + x8 + x15;	R_square =0.0345223011	P_value =0
mode: Y = x1 + x4 + x9 + x10;	R_square =0.0323427325	P_value =0
mode: Y = x1 + x4 + x9 + x11;	R_square =0.0313873403	P_value =0
mode: Y = x1 + x4 + x9 + x12;	R_square =0.0309936914	P_value =0
mode: Y = x1 + x4 + x9 + x14;	R_square =0.3284311507	P_value =0
mode: Y = x1 + x4 + x9 + x15;	R_square =0.0345223011	P_value =0
mode: Y = x1 + x4 + x10 + x11;	R_square =0.0104068158	P_value =0
mode: Y = x1 + x4 + x10 + x12;	R_square =0.01035101	P_value =0
mode: Y = x1 + x4 + x10 + x13;	R_square =0.0104260512	P_value =0
mode: Y = x1 + x4 + x10 + x14;	R_square =0.3101681243	P_value =0
mode: Y = x1 + x4 + x10 + x15;	R_square =0.0129854599	P_value =0
mode: Y = x1 + x4 + x11 + x12;	R_square =0.0097262731	P_value =0
mode: Y = x1 + x4 + x11 + x13;	R_square =0.0104260512	P_value =0
mode: Y = x1 + x4 + x11 + x14;	R_square =0.3067037649	P_value =0
mode: Y = x1 + x4 + x11 + x15;	R_square =0.0124381817	P_value =0
mode: Y = x1 + x4 + x12 + x13;	R_square =0.0101045402	P_value =0
mode: Y = x1 + x4 + x12 + x14;	R_square =0.3065548818	P_value =0
mode: Y = x1 + x4 + x12 + x15;	R_square =0.0122113589	P_value =0
mode: Y = x1 + x4 + x13 + x14;	R_square =0.3066136843	P_value =0
mode: Y = x1 + x4 + x13 + x15;	R_square =0.0104598687	P_value =0
mode: Y = x1 + x4 + x14 + x15;	R_square =0.3023455091	P_value =0
mode: Y = x1 + x5 + x6 + x7;	R_square =0.0208275669	P_value =0
mode: Y = x1 + x5 + x6 + x8;	R_square =0.0350416107	P_value =0
mode: Y = x1 + x5 + x6 + x9;	R_square =0.0350416107	P_value =0
mode: Y = x1 + x5 + x6 + x10;	R_square =0.0198425459	P_value =0
mode: Y = x1 + x5 + x6 + x11;	R_square =0.0202165826	P_value =0
mode: Y = x1 + x5 + x6 + x12;	R_square =0.0204115587	P_value =0
mode: Y = x1 + x5 + x6 + x13;	R_square =0.0164694629	P_value =0
mode: Y = x1 + x5 + x6 + x14;	R_square =0.3147675037	P_value =0
mode: Y = x1 + x5 + x6 + x15;	R_square =0.0200397447	P_value =0
mode: Y = x1 + x5 + x7 + x8;	R_square =0.0364218873	P_value =0

mode: Y = x1 + x5 + x7 + x9;	R_square =0.0364218873	P_value =0
mode: Y = x1 + x5 + x7 + x10;	R_square =0.02359365	P_value =0
mode: Y = x1 + x5 + x7 + x11;	R_square =0.0233100488	P_value =0
mode: Y = x1 + x5 + x7 + x12;	R_square =0.0231734992	P_value =0
mode: Y = x1 + x5 + x7 + x13;	R_square =0.0206347923	P_value =0
mode: Y = x1 + x5 + x7 + x14;	R_square =0.3142650962	P_value =0
mode: Y = x1 + x5 + x7 + x15;	R_square =0.0239782175	P_value =0
mode: Y = x1 + x5 + x8 + x9;	R_square =0.0330952234	P_value =0
mode: Y = x1 + x5 + x8 + x10;	R_square =0.0347582849	P_value =0
mode: Y = x1 + x5 + x8 + x11;	R_square =0.0336245832	P_value =0
mode: Y = x1 + x5 + x8 + x12;	R_square =0.0332226852	P_value =0
mode: Y = x1 + x5 + x8 + x13;	R_square =0.0342531094	P_value =0
mode: Y = x1 + x5 + x8 + x14;	R_square =0.3300620328	P_value =0
mode: Y = x1 + x5 + x8 + x15;	R_square =0.0389434252	P_value =0
mode: Y = x1 + x5 + x9 + x10;	R_square =0.0347582849	P_value =0
mode: Y = x1 + x5 + x9 + x11;	R_square =0.0336245832	P_value =0
mode: Y = x1 + x5 + x9 + x12;	R_square =0.0332226852	P_value =0
mode: Y = x1 + x5 + x9 + x13;	R_square =0.0342531094	P_value =0
mode: Y = x1 + x5 + x9 + x14;	R_square =0.3300620328	P_value =0
mode: Y = x1 + x5 + x9 + x15;	R_square =0.0389434252	P_value =0
mode: Y = x1 + x5 + x10 + x11;	R_square =0.0178867214	P_value =0
mode: Y = x1 + x5 + x10 + x12;	R_square =0.0177645619	P_value =0
mode: Y = x1 + x5 + x10 + x13;	R_square =0.0179042178	P_value =0
mode: Y = x1 + x5 + x10 + x14;	R_square =0.3137822608	P_value =0
mode: Y = x1 + x5 + x10 + x15;	R_square =0.0200193241	P_value =0
mode: Y = x1 + x5 + x11 + x12;	R_square =0.0168526667	P_value =0
mode: Y = x1 + x5 + x11 + x13;	R_square =0.0179042178	P_value =0
mode: Y = x1 + x5 + x11 + x14;	R_square =0.3100229072	P_value =0
mode: Y = x1 + x5 + x11 + x15;	R_square =0.0191825912	P_value =0
mode: Y = x1 + x5 + x12 + x13;	R_square =0.0174984933	P_value =0
mode: Y = x1 + x5 + x12 + x14;	R_square =0.3098939342	P_value =0
mode: Y = x1 + x5 + x12 + x15;	R_square =0.0189237861	P_value =0
mode: Y = x1 + x5 + x13 + x14;	R_square =0.310587453	P_value =0
mode: Y = x1 + x5 + x13 + x15;	R_square =0.0177643631	P_value =0
mode: Y = x1 + x5 + x14 + x15;	R_square =0.3057283902	P_value =0
mode: Y = x1 + x6 + x7 + x8;	R_square =0.0340763578	P_value =0
mode: Y = x1 + x6 + x7 + x9;	R_square =0.0340763578	P_value =0
mode: Y = x1 + x6 + x7 + x10;	R_square =0.0195023325	P_value =0
mode: Y = x1 + x6 + x7 + x11;	R_square =0.0198517136	P_value =0
mode: Y = x1 + x6 + x7 + x12;	R_square =0.0200053309	P_value =0
mode: Y = x1 + x6 + x7 + x13;	R_square =0.0158427074	P_value =0
mode: Y = x1 + x6 + x7 + x14;	R_square =0.3151804866	P_value =0

mode: Y = x1 + x6 + x7 + x15;	R_square =0.0202434043	P_value =0
mode: Y = x1 + x6 + x8 + x9;	R_square =0.0310596068	P_value =0
mode: Y = x1 + x6 + x8 + x10;	R_square =0.0340025953	P_value =0
mode: Y = x1 + x6 + x8 + x11;	R_square =0.0341175592	P_value =0
mode: Y = x1 + x6 + x8 + x12;	R_square =0.0339606939	P_value =0
mode: Y = x1 + x6 + x8 + x13;	R_square =0.0312759413	P_value =0
mode: Y = x1 + x6 + x8 + x14;	R_square =0.3340062409	P_value =0
mode: Y = x1 + x6 + x8 + x15;	R_square =0.0376042227	P_value =0
mode: Y = x1 + x6 + x9 + x10;	R_square =0.0340025953	P_value =0
mode: Y = x1 + x6 + x9 + x11;	R_square =0.0341175592	P_value =0
mode: Y = x1 + x6 + x9 + x12;	R_square =0.0339606939	P_value =0
mode: Y = x1 + x6 + x9 + x13;	R_square =0.0312759413	P_value =0
mode: Y = x1 + x6 + x9 + x14;	R_square =0.3340062409	P_value =0
mode: Y = x1 + x6 + x9 + x15;	R_square =0.0376042227	P_value =0
mode: Y = x1 + x6 + x10 + x11;	R_square =0.0141258482	P_value =0
mode: Y = x1 + x6 + x10 + x12;	R_square =0.0145314094	P_value =0
mode: Y = x1 + x6 + x10 + x13;	R_square =0.0141474028	P_value =0
mode: Y = x1 + x6 + x10 + x14;	R_square =0.3155314043	P_value =0
mode: Y = x1 + x6 + x10 + x15;	R_square =0.0165520317	P_value =0
mode: Y = x1 + x6 + x11 + x12;	R_square =0.0149873331	P_value =0
mode: Y = x1 + x6 + x11 + x13;	R_square =0.0141474028	P_value =0
mode: Y = x1 + x6 + x11 + x14;	R_square =0.3145721218	P_value =0
mode: Y = x1 + x6 + x11 + x15;	R_square =0.0170495832	P_value =0
mode: Y = x1 + x6 + x12 + x13;	R_square =0.0144529654	P_value =0
mode: Y = x1 + x6 + x12 + x14;	R_square =0.3145530385	P_value =0
mode: Y = x1 + x6 + x12 + x15;	R_square =0.017260182	P_value =0
mode: Y = x1 + x6 + x13 + x14;	R_square =0.3118232248	P_value =0
mode: Y = x1 + x6 + x13 + x15;	R_square =0.0140443465	P_value =0
mode: Y = x1 + x6 + x14 + x15;	R_square =0.3099702162	P_value =0
mode: Y = x1 + x7 + x8 + x9;	R_square =0.033500297	P_value =0
mode: Y = x1 + x7 + x8 + x10;	R_square =0.0362937509	P_value =0
mode: Y = x1 + x7 + x8 + x11;	R_square =0.0357684357	P_value =0
mode: Y = x1 + x7 + x8 + x12;	R_square =0.035417817	P_value =0
mode: Y = x1 + x7 + x8 + x13;	R_square =0.0341283604	P_value =0
mode: Y = x1 + x7 + x8 + x14;	R_square =0.3327135629	P_value =0
mode: Y = x1 + x7 + x8 + x15;	R_square =0.039970251	P_value =0
mode: Y = x1 + x7 + x9 + x10;	R_square =0.0362937509	P_value =0
mode: Y = x1 + x7 + x9 + x11;	R_square =0.0357684357	P_value =0
mode: Y = x1 + x7 + x9 + x12;	R_square =0.035417817	P_value =0
mode: Y = x1 + x7 + x9 + x13;	R_square =0.0341283604	P_value =0
mode: Y = x1 + x7 + x9 + x14;	R_square =0.3327135629	P_value =0
mode: Y = x1 + x7 + x9 + x15;	R_square =0.039970251	P_value =0

mode: $Y = x_1 + x_7 + x_{10} + x_{11}$;	$R_square = 0.0196545612$	$P_value = 0$
mode: $Y = x_1 + x_7 + x_{10} + x_{12}$;	$R_square = 0.0196647569$	$P_value = 0$
mode: $Y = x_1 + x_7 + x_{10} + x_{13}$;	$R_square = 0.0196735579$	$P_value = 0$
mode: $Y = x_1 + x_7 + x_{10} + x_{14}$;	$R_square = 0.3173047595$	$P_value = 0$
mode: $Y = x_1 + x_7 + x_{10} + x_{15}$;	$R_square = 0.0223817969$	$P_value = 0$
mode: $Y = x_1 + x_7 + x_{11} + x_{12}$;	$R_square = 0.0194005894$	$P_value = 0$
mode: $Y = x_1 + x_7 + x_{11} + x_{13}$;	$R_square = 0.0196735579$	$P_value = 0$
mode: $Y = x_1 + x_7 + x_{11} + x_{14}$;	$R_square = 0.3144834417$	$P_value = 0$
mode: $Y = x_1 + x_7 + x_{11} + x_{15}$;	$R_square = 0.0221916395$	$P_value = 0$
mode: $Y = x_1 + x_7 + x_{12} + x_{13}$;	$R_square = 0.0194688387$	$P_value = 0$
mode: $Y = x_1 + x_7 + x_{12} + x_{14}$;	$R_square = 0.3143322893$	$P_value = 0$
mode: $Y = x_1 + x_7 + x_{12} + x_{15}$;	$R_square = 0.0220260784$	$P_value = 0$
mode: $Y = x_1 + x_7 + x_{13} + x_{14}$;	$R_square = 0.3138634691$	$P_value = 0$
mode: $Y = x_1 + x_7 + x_{13} + x_{15}$;	$R_square = 0.0201576087$	$P_value = 0$
mode: $Y = x_1 + x_7 + x_{14} + x_{15}$;	$R_square = 0.3103551636$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_9 + x_{10}$;	$R_square = 0.0323427325$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_9 + x_{11}$;	$R_square = 0.0313873403$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_9 + x_{12}$;	$R_square = 0.0309936914$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_9 + x_{13}$;	$R_square = 0.0294245987$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_9 + x_{14}$;	$R_square = 0.3284311507$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_9 + x_{15}$;	$R_square = 0.0345223011$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_{10} + x_{11}$;	$R_square = 0.0329768399$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_{10} + x_{12}$;	$R_square = 0.0325994148$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_{10} + x_{13}$;	$R_square = 0.0329917874$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_{10} + x_{14}$;	$R_square = 0.3347137012$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_{10} + x_{15}$;	$R_square = 0.0382401701$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_{11} + x_{12}$;	$R_square = 0.0314668393$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_{11} + x_{13}$;	$R_square = 0.0329917874$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_{11} + x_{14}$;	$R_square = 0.3305311977$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_{11} + x_{15}$;	$R_square = 0.0368145854$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_{12} + x_{13}$;	$R_square = 0.0322957985$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_{12} + x_{14}$;	$R_square = 0.3304867884$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_{12} + x_{15}$;	$R_square = 0.0364552211$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_{13} + x_{14}$;	$R_square = 0.3319954605$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_{13} + x_{15}$;	$R_square = 0.0360222348$	$P_value = 0$
mode: $Y = x_1 + x_8 + x_{14} + x_{15}$;	$R_square = 0.3273571139$	$P_value = 0$
mode: $Y = x_1 + x_9 + x_{10} + x_{11}$;	$R_square = 0.0329768399$	$P_value = 0$
mode: $Y = x_1 + x_9 + x_{10} + x_{12}$;	$R_square = 0.0325994148$	$P_value = 0$
mode: $Y = x_1 + x_9 + x_{10} + x_{13}$;	$R_square = 0.0329917874$	$P_value = 0$
mode: $Y = x_1 + x_9 + x_{10} + x_{14}$;	$R_square = 0.3347137012$	$P_value = 0$
mode: $Y = x_1 + x_9 + x_{10} + x_{15}$;	$R_square = 0.0382401701$	$P_value = 0$
mode: $Y = x_1 + x_9 + x_{11} + x_{12}$;	$R_square = 0.0314668393$	$P_value = 0$

mode: Y = x1 + x9 + x11 + x13;	R_square =0.0329917874	P_value =0
mode: Y = x1 + x9 + x11 + x14;	R_square =0.3305311977	P_value =0
mode: Y = x1 + x9 + x11 + x15;	R_square =0.0368145854	P_value =0
mode: Y = x1 + x9 + x12 + x13;	R_square =0.0322957985	P_value =0
mode: Y = x1 + x9 + x12 + x14;	R_square =0.3304867884	P_value =0
mode: Y = x1 + x9 + x12 + x15;	R_square =0.0364552211	P_value =0
mode: Y = x1 + x9 + x13 + x14;	R_square =0.3319954605	P_value =0
mode: Y = x1 + x9 + x13 + x15;	R_square =0.0360222348	P_value =0
mode: Y = x1 + x9 + x14 + x15;	R_square =0.3273571139	P_value =0
mode: Y = x1 + x10 + x11 + x12;	R_square =0.0109788938	P_value =0
mode: Y = x1 + x10 + x11 + x13;	R_square =0.0104260512	P_value =0
mode: Y = x1 + x10 + x11 + x14;	R_square =0.3102100715	P_value =0
mode: Y = x1 + x10 + x11 + x15;	R_square =0.0136292261	P_value =0
mode: Y = x1 + x10 + x12 + x13;	R_square =0.0109977796	P_value =0
mode: Y = x1 + x10 + x12 + x14;	R_square =0.3100109	P_value =0
mode: Y = x1 + x10 + x12 + x15;	R_square =0.0134702779	P_value =0
mode: Y = x1 + x10 + x13 + x14;	R_square =0.3102151028	P_value =0
mode: Y = x1 + x10 + x13 + x15;	R_square =0.0136465846	P_value =0
mode: Y = x1 + x10 + x14 + x15;	R_square =0.3076209849	P_value =0
mode: Y = x1 + x11 + x12 + x13;	R_square =0.0109977796	P_value =0
mode: Y = x1 + x11 + x12 + x14;	R_square =0.3065485832	P_value =0
mode: Y = x1 + x11 + x12 + x15;	R_square =0.0126851882	P_value =0
mode: Y = x1 + x11 + x13 + x14;	R_square =0.3102151028	P_value =0
mode: Y = x1 + x11 + x13 + x15;	R_square =0.0136465846	P_value =0
mode: Y = x1 + x11 + x14 + x15;	R_square =0.303891101	P_value =0
mode: Y = x1 + x12 + x13 + x14;	R_square =0.3097703584	P_value =0
mode: Y = x1 + x12 + x13 + x15;	R_square =0.0132191269	P_value =0
mode: Y = x1 + x12 + x14 + x15;	R_square =0.3037667183	P_value =0
mode: Y = x1 + x13 + x14 + x15;	R_square =0.3050135401	P_value =0
mode: Y = x2 + x3 + x4 + x5;	R_square =0.0129995313	P_value =0
mode: Y = x2 + x3 + x4 + x6;	R_square =0.0047941273	P_value =0
mode: Y = x2 + x3 + x4 + x7;	R_square =0.0118534089	P_value =0
mode: Y = x2 + x3 + x4 + x8;	R_square =0.0100910776	P_value =0
mode: Y = x2 + x3 + x4 + x9;	R_square =0.0100910776	P_value =0
mode: Y = x2 + x3 + x4 + x10;	R_square =0.001062823	P_value =0
mode: Y = x2 + x3 + x4 + x11;	R_square =0.0008450893	P_value =0
mode: Y = x2 + x3 + x4 + x12;	R_square =0.0008184348	P_value =0
mode: Y = x2 + x3 + x4 + x13;	R_square =0.0006306411	P_value =0
mode: Y = x2 + x3 + x4 + x14;	R_square =0.3017376405	P_value =0
mode: Y = x2 + x3 + x4 + x15;	R_square =0.0048605302	P_value =0
mode: Y = x2 + x3 + x5 + x6;	R_square =0.0163743631	P_value =0
mode: Y = x2 + x3 + x5 + x7;	R_square =0.0202232103	P_value =0

mode: Y = x2 + x3 + x5 + x8;	R_square =0.0331031533	P_value =0
mode: Y = x2 + x3 + x5 + x9;	R_square =0.0331031533	P_value =0
mode: Y = x2 + x3 + x5 + x10;	R_square =0.0172762168	P_value =0
mode: Y = x2 + x3 + x5 + x11;	R_square =0.0166183073	P_value =0
mode: Y = x2 + x3 + x5 + x12;	R_square =0.0164148171	P_value =0
mode: Y = x2 + x3 + x5 + x13;	R_square =0.0138014263	P_value =0
mode: Y = x2 + x3 + x5 + x14;	R_square =0.3080939539	P_value =0
mode: Y = x2 + x3 + x5 + x15;	R_square =0.0166324615	P_value =0
mode: Y = x2 + x3 + x6 + x7;	R_square =0.0124621187	P_value =0
mode: Y = x2 + x3 + x6 + x8;	R_square =0.0142008133	P_value =0
mode: Y = x2 + x3 + x6 + x9;	R_square =0.0142008133	P_value =0
mode: Y = x2 + x3 + x6 + x10;	R_square =0.0054494611	P_value =0
mode: Y = x2 + x3 + x6 + x11;	R_square =0.0061584985	P_value =0
mode: Y = x2 + x3 + x6 + x12;	R_square =0.006790919	P_value =0
mode: Y = x2 + x3 + x6 + x13;	R_square =0.0047987029	P_value =0
mode: Y = x2 + x3 + x6 + x14;	R_square =0.3097019467	P_value =0
mode: Y = x2 + x3 + x6 + x15;	R_square =0.0095714205	P_value =0
mode: Y = x2 + x3 + x7 + x8;	R_square =0.020732723	P_value =0
mode: Y = x2 + x3 + x7 + x9;	R_square =0.020732723	P_value =0
mode: Y = x2 + x3 + x7 + x10;	R_square =0.0130680461	P_value =0
mode: Y = x2 + x3 + x7 + x11;	R_square =0.0131666528	P_value =0
mode: Y = x2 + x3 + x7 + x12;	R_square =0.0132112832	P_value =0
mode: Y = x2 + x3 + x7 + x13;	R_square =0.0120542535	P_value =0
mode: Y = x2 + x3 + x7 + x14;	R_square =0.3107018068	P_value =0
mode: Y = x2 + x3 + x7 + x15;	R_square =0.0165585861	P_value =0
mode: Y = x2 + x3 + x8 + x9;	R_square =0.0100910776	P_value =0
mode: Y = x2 + x3 + x8 + x10;	R_square =0.0119103709	P_value =0
mode: Y = x2 + x3 + x8 + x11;	R_square =0.0115542402	P_value =0
mode: Y = x2 + x3 + x8 + x12;	R_square =0.0112505046	P_value =0
mode: Y = x2 + x3 + x8 + x13;	R_square =0.0107599019	P_value =0
mode: Y = x2 + x3 + x8 + x14;	R_square =0.3185771444	P_value =0
mode: Y = x2 + x3 + x8 + x15;	R_square =0.0167795649	P_value =0
mode: Y = x2 + x3 + x9 + x10;	R_square =0.0119103709	P_value =0
mode: Y = x2 + x3 + x9 + x11;	R_square =0.0115542402	P_value =0
mode: Y = x2 + x3 + x9 + x12;	R_square =0.0112505046	P_value =0
mode: Y = x2 + x3 + x9 + x13;	R_square =0.0107599019	P_value =0
mode: Y = x2 + x3 + x9 + x14;	R_square =0.3185771444	P_value =0
mode: Y = x2 + x3 + x9 + x15;	R_square =0.0167795649	P_value =0
mode: Y = x2 + x3 + x10 + x11;	R_square =0.0018021972	P_value =0
mode: Y = x2 + x3 + x10 + x12;	R_square =0.0018979869	P_value =0
mode: Y = x2 + x3 + x10 + x13;	R_square =0.0018232603	P_value =0
mode: Y = x2 + x3 + x10 + x14;	R_square =0.305546882	P_value =0

mode: $Y = x_2 + x_3 + x_{10} + x_{15}$;	R_square =0.0054824637	P_value =0
mode: $Y = x_2 + x_3 + x_{11} + x_{12}$;	R_square =0.0013691336	P_value =0
mode: $Y = x_2 + x_3 + x_{11} + x_{13}$;	R_square =0.0018232603	P_value =0
mode: $Y = x_2 + x_3 + x_{11} + x_{14}$;	R_square =0.3022032394	P_value =0
mode: $Y = x_2 + x_3 + x_{11} + x_{15}$;	R_square =0.0050499473	P_value =0
mode: $Y = x_2 + x_3 + x_{12} + x_{13}$;	R_square =0.0016473307	P_value =0
mode: $Y = x_2 + x_3 + x_{12} + x_{14}$;	R_square =0.3020392184	P_value =0
mode: $Y = x_2 + x_3 + x_{12} + x_{15}$;	R_square =0.0049072904	P_value =0
mode: $Y = x_2 + x_3 + x_{13} + x_{14}$;	R_square =0.3039216506	P_value =0
mode: $Y = x_2 + x_3 + x_{13} + x_{15}$;	R_square =0.0057901124	P_value =0
mode: $Y = x_2 + x_3 + x_{14} + x_{15}$;	R_square =0.2998919327	P_value =0
mode: $Y = x_2 + x_4 + x_5 + x_6$;	R_square =0.0148038057	P_value =0
mode: $Y = x_2 + x_4 + x_5 + x_7$;	R_square =0.0189850217	P_value =0
mode: $Y = x_2 + x_4 + x_5 + x_8$;	R_square =0.0320034916	P_value =0
mode: $Y = x_2 + x_4 + x_5 + x_9$;	R_square =0.0320034916	P_value =0
mode: $Y = x_2 + x_4 + x_5 + x_{10}$;	R_square =0.0157670942	P_value =0
mode: $Y = x_2 + x_4 + x_5 + x_{11}$;	R_square =0.0150904633	P_value =0
mode: $Y = x_2 + x_4 + x_5 + x_{12}$;	R_square =0.0149129968	P_value =0
mode: $Y = x_2 + x_4 + x_5 + x_{13}$;	R_square =0.0121820542	P_value =0
mode: $Y = x_2 + x_4 + x_5 + x_{14}$;	R_square =0.3071791276	P_value =0
mode: $Y = x_2 + x_4 + x_5 + x_{15}$;	R_square =0.0150698729	P_value =0
mode: $Y = x_2 + x_4 + x_6 + x_7$;	R_square =0.0123888898	P_value =0
mode: $Y = x_2 + x_4 + x_6 + x_8$;	R_square =0.0138879608	P_value =0
mode: $Y = x_2 + x_4 + x_6 + x_9$;	R_square =0.0138879608	P_value =0
mode: $Y = x_2 + x_4 + x_6 + x_{10}$;	R_square =0.0052092699	P_value =0
mode: $Y = x_2 + x_4 + x_6 + x_{11}$;	R_square =0.0059130712	P_value =0
mode: $Y = x_2 + x_4 + x_6 + x_{12}$;	R_square =0.0065540312	P_value =0
mode: $Y = x_2 + x_4 + x_6 + x_{13}$;	R_square =0.0047325114	P_value =0
mode: $Y = x_2 + x_4 + x_6 + x_{14}$;	R_square =0.3096301595	P_value =0
mode: $Y = x_2 + x_4 + x_6 + x_{15}$;	R_square =0.0094800901	P_value =0
mode: $Y = x_2 + x_4 + x_7 + x_8$;	R_square =0.0202966011	P_value =0
mode: $Y = x_2 + x_4 + x_7 + x_9$;	R_square =0.0202966011	P_value =0
mode: $Y = x_2 + x_4 + x_7 + x_{10}$;	R_square =0.012799675	P_value =0
mode: $Y = x_2 + x_4 + x_7 + x_{11}$;	R_square =0.0128832211	P_value =0
mode: $Y = x_2 + x_4 + x_7 + x_{12}$;	R_square =0.0129375006	P_value =0
mode: $Y = x_2 + x_4 + x_7 + x_{13}$;	R_square =0.0119925348	P_value =0
mode: $Y = x_2 + x_4 + x_7 + x_{14}$;	R_square =0.3106408416	P_value =0
mode: $Y = x_2 + x_4 + x_7 + x_{15}$;	R_square =0.016470513	P_value =0
mode: $Y = x_2 + x_4 + x_8 + x_9$;	R_square =0.0099024067	P_value =0
mode: $Y = x_2 + x_4 + x_8 + x_{10}$;	R_square =0.0112041176	P_value =0
mode: $Y = x_2 + x_4 + x_8 + x_{11}$;	R_square =0.0107939787	P_value =0
mode: $Y = x_2 + x_4 + x_8 + x_{12}$;	R_square =0.0104916093	P_value =0

mode: $Y = x_2 + x_4 + x_8 + x_{13}$;	$R_square = 0.0105784713$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_8 + x_{14}$;	$R_square = 0.3182119959$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_8 + x_{15}$;	$R_square = 0.016549121$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_9 + x_{10}$;	$R_square = 0.0112041176$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_9 + x_{11}$;	$R_square = 0.0107939787$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_9 + x_{12}$;	$R_square = 0.0104916093$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_9 + x_{13}$;	$R_square = 0.0105784713$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_9 + x_{14}$;	$R_square = 0.3182119959$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_9 + x_{15}$;	$R_square = 0.016549121$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_{10} + x_{11}$;	$R_square = 0.0016410867$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_{10} + x_{12}$;	$R_square = 0.0017471661$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_{10} + x_{13}$;	$R_square = 0.0016621583$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_{10} + x_{14}$;	$R_square = 0.3054190978$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_{10} + x_{15}$;	$R_square = 0.0053953809$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_{11} + x_{12}$;	$R_square = 0.001198523$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_{11} + x_{13}$;	$R_square = 0.0016621583$	$P_value = 0$

mode: $Y = x_2 + x_4 + x_{11} + x_{14}$;	$R_square = 0.3020491037$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_{11} + x_{15}$;	$R_square = 0.0049501359$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_{12} + x_{13}$;	$R_square = 0.0014940085$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_{12} + x_{14}$;	$R_square = 0.3018849983$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_{12} + x_{15}$;	$R_square = 0.0048121973$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_{13} + x_{14}$;	$R_square = 0.3038767517$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_{13} + x_{15}$;	$R_square = 0.005730542$	$P_value = 0$
mode: $Y = x_2 + x_4 + x_{14} + x_{15}$;	$R_square = 0.299828669$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_6 + x_7$;	$R_square = 0.0195773833$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_6 + x_8$;	$R_square = 0.0338317469$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_6 + x_9$;	$R_square = 0.0338317469$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_6 + x_{10}$;	$R_square = 0.0182865815$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_6 + x_{11}$;	$R_square = 0.0186515536$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_6 + x_{12}$;	$R_square = 0.0188907634$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_6 + x_{13}$;	$R_square = 0.014929382$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_6 + x_{14}$;	$R_square = 0.3139407865$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_6 + x_{15}$;	$R_square = 0.0185423785$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_7 + x_8$;	$R_square = 0.0352393234$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_7 + x_9$;	$R_square = 0.0352393234$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_7 + x_{10}$;	$R_square = 0.0222259172$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_7 + x_{11}$;	$R_square = 0.0219304639$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_7 + x_{12}$;	$R_square = 0.0218234821$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_7 + x_{13}$;	$R_square = 0.0194128159$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_7 + x_{14}$;	$R_square = 0.3136425493$	$P_value = 0$
mode: $Y = x_2 + x_5 + x_7 + x_{15}$;	$R_square = 0.0228038889$	$P_value = 0$

mode: Y = x2 + x5 + x8 + x9;	R_square =0.0320034916	P_value =0
mode: Y = x2 + x5 + x8 + x10;	R_square =0.033256557	P_value =0
mode: Y = x2 + x5 + x8 + x11;	R_square =0.0320716927	P_value =0
mode: Y = x2 + x5 + x8 + x12;	R_square =0.0316716871	P_value =0
mode: Y = x2 + x5 + x8 + x13;	R_square =0.0331682412	P_value =0
mode: Y = x2 + x5 + x8 + x14;	R_square =0.3290063742	P_value =0
mode: Y = x2 + x5 + x8 + x15;	R_square =0.0377891855	P_value =0
mode: Y = x2 + x5 + x9 + x10;	R_square =0.033256557	P_value =0
mode: Y = x2 + x5 + x9 + x11;	R_square =0.0320716927	P_value =0
mode: Y = x2 + x5 + x9 + x12;	R_square =0.0316716871	P_value =0
mode: Y = x2 + x5 + x9 + x13;	R_square =0.0331682412	P_value =0
mode: Y = x2 + x5 + x9 + x14;	R_square =0.3290063742	P_value =0
mode: Y = x2 + x5 + x9 + x15;	R_square =0.0377891855	P_value =0
mode: Y = x2 + x5 + x10 + x11;	R_square =0.0164109477	P_value =0
mode: Y = x2 + x5 + x10 + x12;	R_square =0.0163280464	P_value =0
mode: Y = x2 + x5 + x10 + x13;	R_square =0.0164287166	P_value =0
mode: Y = x2 + x5 + x10 + x14;	R_square =0.3129188436	P_value =0
mode: Y = x2 + x5 + x10 + x15;	R_square =0.0188774092	P_value =0
mode: Y = x2 + x5 + x11 + x12;	R_square =0.0153732422	P_value =0
mode: Y = x2 + x5 + x11 + x13;	R_square =0.0164287166	P_value =0
mode: Y = x2 + x5 + x11 + x14;	R_square =0.3091159002	P_value =0
mode: Y = x2 + x5 + x11 + x15;	R_square =0.0180126001	P_value =0
mode: Y = x2 + x5 + x12 + x13;	R_square =0.0160557582	P_value =0
mode: Y = x2 + x5 + x12 + x14;	R_square =0.3089801167	P_value =0
mode: Y = x2 + x5 + x12 + x15;	R_square =0.0177732132	P_value =0
mode: Y = x2 + x5 + x13 + x14;	R_square =0.3096920048	P_value =0
mode: Y = x2 + x5 + x13 + x15;	R_square =0.016251004	P_value =0
mode: Y = x2 + x5 + x14 + x15;	R_square =0.304862305	P_value =0
mode: Y = x2 + x6 + x7 + x8;	R_square =0.0207895306	P_value =0
mode: Y = x2 + x6 + x7 + x9;	R_square =0.0207895306	P_value =0
mode: Y = x2 + x6 + x7 + x10;	R_square =0.0132328762	P_value =0
mode: Y = x2 + x6 + x7 + x12;	R_square =0.0139787204	P_value =0
mode: Y = x2 + x6 + x7 + x13;	R_square =0.0124067202	P_value =0
mode: Y = x2 + x6 + x7 + x14;	R_square =0.3135285914	P_value =0
mode: Y = x2 + x6 + x7 + x15;	R_square =0.0170739647	P_value =0
mode: Y = x2 + x6 + x8 + x9;	R_square =0.0138879608	P_value =0
mode: Y = x2 + x6 + x8 + x10;	R_square =0.0144410047	P_value =0
mode: Y = x2 + x6 + x8 + x11;	R_square =0.0150769142	P_value =0
mode: Y = x2 + x6 + x8 + x12;	R_square =0.0152695817	P_value =0
mode: Y = x2 + x6 + x8 + x13;	R_square =0.0139071259	P_value =0
mode: Y = x2 + x6 + x8 + x14;	R_square =0.3251775363	P_value =0
mode: Y = x2 + x6 + x8 + x15;	R_square =0.0210532209	P_value =0

mode: Y = x2 + x6 + x9 + x10;	R_square =0.0144410047	P_value =0
mode: Y = x2 + x6 + x9 + x11;	R_square =0.0150769142	P_value =0
mode: Y = x2 + x6 + x9 + x12;	R_square =0.0152695817	P_value =0
mode: Y = x2 + x6 + x9 + x13;	R_square =0.0139071259	P_value =0
mode: Y = x2 + x6 + x9 + x14;	R_square =0.3251775363	P_value =0
mode: Y = x2 + x6 + x9 + x15;	R_square =0.0210532209	P_value =0
mode: Y = x2 + x6 + x10 + x11;	R_square =0.005975839	P_value =0
mode: Y = x2 + x6 + x10 + x12;	R_square =0.0066474474	P_value =0
mode: Y = x2 + x6 + x10 + x13;	R_square =0.0059994139	P_value =0
mode: Y = x2 + x6 + x10 + x14;	R_square =0.3113305742	P_value =0
mode: Y = x2 + x6 + x10 + x15;	R_square =0.0094954207	P_value =0
mode: Y = x2 + x6 + x11 + x12;	R_square =0.0071995696	P_value =0
mode: Y = x2 + x6 + x11 + x13;	R_square =0.0059994139	P_value =0
mode: Y = x2 + x6 + x11 + x14;	R_square =0.3104973639	P_value =0
mode: Y = x2 + x6 + x11 + x15;	R_square =0.0100971179	P_value =0
mode: Y = x2 + x6 + x12 + x13;	R_square =0.0065815734	P_value =0
mode: Y = x2 + x6 + x12 + x14;	R_square =0.310560088	P_value =0
mode: Y = x2 + x6 + x12 + x15;	R_square =0.0105078519	P_value =0
mode: Y = x2 + x6 + x13 + x14;	R_square =0.3094665179	P_value =0
mode: Y = x2 + x6 + x13 + x15;	R_square =0.009720635	P_value =0
mode: Y = x2 + x6 + x14 + x15;	R_square =0.3078151198	P_value =0
mode: Y = x2 + x7 + x8 + x9;	R_square =0.0202966011	P_value =0
mode: Y = x2 + x7 + x8 + x10;	R_square =0.0210851358	P_value =0
mode: Y = x2 + x7 + x8 + x11;	R_square =0.0211141223	P_value =0
mode: Y = x2 + x7 + x8 + x12;	R_square =0.0208941099	P_value =0
mode: Y = x2 + x7 + x8 + x13;	R_square =0.0206033647	P_value =0
mode: Y = x2 + x7 + x8 + x14;	R_square =0.3259114625	P_value =0
mode: Y = x2 + x7 + x8 + x15;	R_square =0.0273104583	P_value =0
mode: Y = x2 + x7 + x9 + x10;	R_square =0.0210851358	P_value =0
mode: Y = x2 + x7 + x9 + x11;	R_square =0.0211141223	P_value =0
mode: Y = x2 + x7 + x9 + x12;	R_square =0.0208941099	P_value =0
mode: Y = x2 + x7 + x9 + x13;	R_square =0.0206033647	P_value =0
mode: Y = x2 + x7 + x9 + x14;	R_square =0.3259114625	P_value =0
mode: Y = x2 + x7 + x9 + x15;	R_square =0.0273104583	P_value =0
mode: Y = x2 + x7 + x10 + x11;	R_square =0.0134664041	P_value =0
mode: Y = x2 + x7 + x10 + x12;	R_square =0.0136223441	P_value =0
mode: Y = x2 + x7 + x10 + x13;	R_square =0.0134868588	P_value =0
mode: Y = x2 + x7 + x10 + x14;	R_square =0.3141904122	P_value =0
mode: Y = x2 + x7 + x10 + x15;	R_square =0.0171876045	P_value =0
mode: Y = x2 + x7 + x11 + x12;	R_square =0.0134514293	P_value =0
mode: Y = x2 + x7 + x11 + x13;	R_square =0.0134868588	P_value =0
mode: Y = x2 + x7 + x11 + x14;	R_square =0.3114927811	P_value =0

mode: $Y = x_2 + x_7 + x_{11} + x_{15}$;	$R_square = 0.0171037506$	$P_value = 0$
mode: $Y = x_2 + x_7 + x_{12} + x_{13}$;	$R_square = 0.0134280761$	$P_value = 0$
mode: $Y = x_2 + x_7 + x_{12} + x_{14}$;	$R_square = 0.3113354498$	$P_value = 0$
mode: $Y = x_2 + x_7 + x_{12} + x_{15}$;	$R_square = 0.0170250327$	$P_value = 0$
mode: $Y = x_2 + x_7 + x_{13} + x_{14}$;	$R_square = 0.3121560409$	$P_value = 0$
mode: $Y = x_2 + x_7 + x_{13} + x_{15}$;	$R_square = 0.0170053449$	$P_value = 0$
mode: $Y = x_2 + x_7 + x_{14} + x_{15}$;	$R_square = 0.308842457$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_9 + x_{10}$;	$R_square = 0.0112041176$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_9 + x_{11}$;	$R_square = 0.0107939787$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_9 + x_{12}$;	$R_square = 0.0104916093$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_9 + x_{13}$;	$R_square = 0.0105784713$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_9 + x_{14}$;	$R_square = 0.3182119959$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_9 + x_{15}$;	$R_square = 0.016549121$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_{10} + x_{11}$;	$R_square = 0.0119779857$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_{10} + x_{12}$;	$R_square = 0.0117462169$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_{10} + x_{13}$;	$R_square = 0.0119970647$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_{10} + x_{14}$;	$R_square = 0.3226976429$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_{10} + x_{15}$;	$R_square = 0.0177003591$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_{11} + x_{12}$;	$R_square = 0.011086055$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_{11} + x_{13}$;	$R_square = 0.0119970647$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_{11} + x_{14}$;	$R_square = 0.3190251102$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_{11} + x_{15}$;	$R_square = 0.016839448$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_{12} + x_{13}$;	$R_square = 0.0114647111$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_{12} + x_{14}$;	$R_square = 0.3188802706$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_{12} + x_{15}$;	$R_square = 0.0165509777$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_{13} + x_{14}$;	$R_square = 0.3212973788$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_{13} + x_{15}$;	$R_square = 0.017687128$	$P_value = 0$
mode: $Y = x_2 + x_8 + x_{14} + x_{15}$;	$R_square = 0.3172596273$	$P_value = 0$
mode: $Y = x_2 + x_9 + x_{10} + x_{11}$;	$R_square = 0.0119779857$	$P_value = 0$
mode: $Y = x_2 + x_9 + x_{10} + x_{12}$;	$R_square = 0.0117462169$	$P_value = 0$
mode: $Y = x_2 + x_9 + x_{10} + x_{13}$;	$R_square = 0.0119970647$	$P_value = 0$
mode: $Y = x_2 + x_9 + x_{10} + x_{14}$;	$R_square = 0.3226976429$	$P_value = 0$
mode: $Y = x_2 + x_9 + x_{10} + x_{15}$;	$R_square = 0.0177003591$	$P_value = 0$
mode: $Y = x_2 + x_9 + x_{11} + x_{12}$;	$R_square = 0.011086055$	$P_value = 0$
mode: $Y = x_2 + x_9 + x_{11} + x_{13}$;	$R_square = 0.0119970647$	$P_value = 0$
mode: $Y = x_2 + x_9 + x_{11} + x_{14}$;	$R_square = 0.3190251102$	$P_value = 0$
mode: $Y = x_2 + x_9 + x_{11} + x_{15}$;	$R_square = 0.016839448$	$P_value = 0$
mode: $Y = x_2 + x_9 + x_{12} + x_{13}$;	$R_square = 0.0114647111$	$P_value = 0$
mode: $Y = x_2 + x_9 + x_{12} + x_{14}$;	$R_square = 0.3188802706$	$P_value = 0$
mode: $Y = x_2 + x_9 + x_{12} + x_{15}$;	$R_square = 0.0165509777$	$P_value = 0$
mode: $Y = x_2 + x_9 + x_{13} + x_{14}$;	$R_square = 0.3212973788$	$P_value = 0$
mode: $Y = x_2 + x_9 + x_{13} + x_{15}$;	$R_square = 0.017687128$	$P_value = 0$

mode: Y = x2 + x9 + x14 + x15;	R_square =0.3172596273	P_value =0
mode: Y = x2 + x10 + x11 + x12;	R_square =0.0024217585	P_value =0
mode: Y = x2 + x10 + x11 + x13;	R_square =0.0016621583	P_value =0
mode: Y = x2 + x10 + x11 + x14;	R_square =0.3054780118	P_value =0
mode: Y = x2 + x10 + x11 + x15;	R_square =0.0060955163	P_value =0
mode: Y = x2 + x10 + x12 + x13;	R_square =0.0024423785	P_value =0
mode: Y = x2 + x10 + x12 + x14;	R_square =0.3053076921	P_value =0
mode: Y = x2 + x10 + x12 + x15;	R_square =0.0060553853	P_value =0
mode: Y = x2 + x10 + x13 + x14;	R_square =0.3054836676	P_value =0
mode: Y = x2 + x10 + x13 + x15;	R_square =0.0061144764	P_value =0
mode: Y = x2 + x10 + x14 + x15;	R_square =0.3034725148	P_value =0
mode: Y = x2 + x11 + x12 + x13;	R_square =0.0024423785	P_value =0
mode: Y = x2 + x11 + x12 + x14;	R_square =0.3018831046	P_value =0
mode: Y = x2 + x11 + x12 + x15;	R_square =0.0053216419	P_value =0
mode: Y = x2 + x11 + x13 + x14;	R_square =0.3054836676	P_value =0
mode: Y = x2 + x11 + x13 + x15;	R_square =0.0061144764	P_value =0
mode: Y = x2 + x11 + x14 + x15;	R_square =0.2998069456	P_value =0
mode: Y = x2 + x12 + x13 + x14;	R_square =0.3050568627	P_value =0
mode: Y = x2 + x12 + x13 + x15;	R_square =0.0057980301	P_value =0
mode: Y = x2 + x12 + x14 + x15;	R_square =0.2996582803	P_value =0
mode: Y = x2 + x13 + x14 + x15;	R_square =0.3024258526	P_value =0
mode: Y = x3 + x4 + x5 + x6;	R_square =0.0161996473	P_value =0
mode: Y = x3 + x4 + x5 + x7;	R_square =0.0200741108	P_value =0
mode: Y = x3 + x4 + x5 + x8;	R_square =0.0328469809	P_value =0
mode: Y = x3 + x4 + x5 + x9;	R_square =0.0328469809	P_value =0
mode: Y = x3 + x4 + x5 + x10;	R_square =0.0170030309	P_value =0
mode: Y = x3 + x4 + x5 + x11;	R_square =0.0163514455	P_value =0
mode: Y = x3 + x4 + x5 + x12;	R_square =0.0161451845	P_value =0
mode: Y = x3 + x4 + x5 + x13;	R_square =0.0135977552	P_value =0
mode: Y = x3 + x4 + x5 + x14;	R_square =0.3079288579	P_value =0
mode: Y = x3 + x4 + x5 + x15;	R_square =0.0164400038	P_value =0
mode: Y = x3 + x4 + x6 + x7;	R_square =0.0124343044	P_value =0
mode: Y = x3 + x4 + x6 + x8;	R_square =0.0141855004	P_value =0
mode: Y = x3 + x4 + x6 + x9;	R_square =0.0141855004	P_value =0
mode: Y = x3 + x4 + x6 + x10;	R_square =0.0053885416	P_value =0
mode: Y = x3 + x4 + x6 + x11;	R_square =0.0060993089	P_value =0
mode: Y = x3 + x4 + x6 + x12;	R_square =0.0067292977	P_value =0
mode: Y = x3 + x4 + x6 + x13;	R_square =0.0047686156	P_value =0
mode: Y = x3 + x4 + x6 + x14;	R_square =0.309660986	P_value =0
mode: Y = x3 + x4 + x6 + x15;	R_square =0.0095400934	P_value =0
mode: Y = x3 + x4 + x7 + x8;	R_square =0.0207216845	P_value =0
mode: Y = x3 + x4 + x7 + x9;	R_square =0.0207216845	P_value =0

mode: $Y = x_3 + x_4 + x_7 + x_{10}$;	R_square =0.0130072374	P_value =0
mode: $Y = x_3 + x_4 + x_7 + x_{11}$;	R_square =0.0131072001	P_value =0
mode: $Y = x_3 + x_4 + x_7 + x_{12}$;	R_square =0.0131494546	P_value =0
mode: $Y = x_3 + x_4 + x_7 + x_{13}$;	R_square =0.0120241431	P_value =0
mode: $Y = x_3 + x_4 + x_7 + x_{14}$;	R_square =0.3106580885	P_value =0
mode: $Y = x_3 + x_4 + x_7 + x_{15}$;	R_square =0.0165274806	P_value =0
mode: $Y = x_3 + x_4 + x_8 + x_9$;	R_square =0.0100672442	P_value =0
mode: $Y = x_3 + x_4 + x_8 + x_{10}$;	R_square =0.0118850943	P_value =0
mode: $Y = x_3 + x_4 + x_8 + x_{11}$;	R_square =0.0115326577	P_value =0
mode: $Y = x_3 + x_4 + x_8 + x_{12}$;	R_square =0.0112272968	P_value =0
mode: $Y = x_3 + x_4 + x_8 + x_{13}$;	R_square =0.0107345012	P_value =0
mode: $Y = x_3 + x_4 + x_8 + x_{14}$;	R_square =0.3185325306	P_value =0
mode: $Y = x_3 + x_4 + x_8 + x_{15}$;	R_square =0.0167573998	P_value =0
mode: $Y = x_3 + x_4 + x_9 + x_{10}$;	R_square =0.0118850943	P_value =0
mode: $Y = x_3 + x_4 + x_9 + x_{11}$;	R_square =0.0115326577	P_value =0
mode: $Y = x_3 + x_4 + x_9 + x_{12}$;	R_square =0.0112272968	P_value =0
mode: $Y = x_3 + x_4 + x_9 + x_{13}$;	R_square =0.0107345012	P_value =0
mode: $Y = x_3 + x_4 + x_9 + x_{14}$;	R_square =0.3185325306	P_value =0
mode: $Y = x_3 + x_4 + x_9 + x_{15}$;	R_square =0.0167573998	P_value =0
mode: $Y = x_3 + x_4 + x_{10} + x_{11}$;	R_square =0.0017331207	P_value =0
mode: $Y = x_3 + x_4 + x_{10} + x_{12}$;	R_square =0.0018259057	P_value =0
mode: $Y = x_3 + x_4 + x_{10} + x_{13}$;	R_square =0.0017542009	P_value =0
mode: $Y = x_3 + x_4 + x_{10} + x_{14}$;	R_square =0.3054535826	P_value =0
mode: $Y = x_3 + x_4 + x_{10} + x_{15}$;	R_square =0.0054036842	P_value =0
mode: $Y = x_3 + x_4 + x_{11} + x_{12}$;	R_square =0.0012984997	P_value =0
mode: $Y = x_3 + x_4 + x_{11} + x_{13}$;	R_square =0.0017542009	P_value =0
mode: $Y = x_3 + x_4 + x_{11} + x_{14}$;	R_square =0.302110689	P_value =0
mode: $Y = x_3 + x_4 + x_{11} + x_{15}$;	R_square =0.004972317	P_value =0
mode: $Y = x_3 + x_4 + x_{12} + x_{13}$;	R_square =0.0015752666	P_value =0
mode: $Y = x_3 + x_4 + x_{12} + x_{14}$;	R_square =0.3019462267	P_value =0
mode: $Y = x_3 + x_4 + x_{12} + x_{15}$;	R_square =0.0048272141	P_value =0
mode: $Y = x_3 + x_4 + x_{13} + x_{14}$;	R_square =0.3038677239	P_value =0
mode: $Y = x_3 + x_4 + x_{13} + x_{15}$;	R_square =0.005750982	P_value =0
mode: $Y = x_3 + x_4 + x_{14} + x_{15}$;	R_square =0.2998382728	P_value =0
mode: $Y = x_3 + x_5 + x_6 + x_7$;	R_square =0.020694593	P_value =0
mode: $Y = x_3 + x_5 + x_6 + x_8$;	R_square =0.034843037	P_value =0
mode: $Y = x_3 + x_5 + x_6 + x_9$;	R_square =0.034843037	P_value =0
mode: $Y = x_3 + x_5 + x_6 + x_{10}$;	R_square =0.0196090057	P_value =0
mode: $Y = x_3 + x_5 + x_6 + x_{11}$;	R_square =0.0199889279	P_value =0
mode: $Y = x_3 + x_5 + x_6 + x_{12}$;	R_square =0.0201842667	P_value =0
mode: $Y = x_3 + x_5 + x_6 + x_{13}$;	R_square =0.0163066001	P_value =0
mode: $Y = x_3 + x_5 + x_6 + x_{14}$;	R_square =0.314654862	P_value =0

mode: $Y = x_3 + x_5 + x_6 + x_{15}$;	R_square =0.0198847993	P_value =0
mode: $Y = x_3 + x_5 + x_7 + x_8$;	R_square =0.0362689082	P_value =0
mode: $Y = x_3 + x_5 + x_7 + x_9$;	R_square =0.0362689082	P_value =0
mode: $Y = x_3 + x_5 + x_7 + x_{10}$;	R_square =0.0233874326	P_value =0
mode: $Y = x_3 + x_5 + x_7 + x_{11}$;	R_square =0.0231087042	P_value =0
mode: $Y = x_3 + x_5 + x_7 + x_{12}$;	R_square =0.0229710878	P_value =0
mode: $Y = x_3 + x_5 + x_7 + x_{13}$;	R_square =0.0204968611	P_value =0
mode: $Y = x_3 + x_5 + x_7 + x_{14}$;	R_square =0.3141671419	P_value =0
mode: $Y = x_3 + x_5 + x_7 + x_{15}$;	R_square =0.0238486031	P_value =0
mode: $Y = x_3 + x_5 + x_8 + x_9$;	R_square =0.0328469809	P_value =0
mode: $Y = x_3 + x_5 + x_8 + x_{10}$;	R_square =0.034664581	P_value =0
mode: $Y = x_3 + x_5 + x_8 + x_{11}$;	R_square =0.0335751705	P_value =0
mode: $Y = x_3 + x_5 + x_8 + x_{12}$;	R_square =0.033166718	P_value =0
mode: $Y = x_3 + x_5 + x_8 + x_{13}$;	R_square =0.0339917588	P_value =0
mode: $Y = x_3 + x_5 + x_8 + x_{14}$;	R_square =0.3298660849	P_value =0
mode: $Y = x_3 + x_5 + x_8 + x_{15}$;	R_square =0.0387142111	P_value =0
mode: $Y = x_3 + x_5 + x_9 + x_{10}$;	R_square =0.034664581	P_value =0
mode: $Y = x_3 + x_5 + x_9 + x_{11}$;	R_square =0.0335751705	P_value =0
mode: $Y = x_3 + x_5 + x_9 + x_{12}$;	R_square =0.033166718	P_value =0
mode: $Y = x_3 + x_5 + x_9 + x_{13}$;	R_square =0.0339917588	P_value =0
mode: $Y = x_3 + x_5 + x_9 + x_{14}$;	R_square =0.3298660849	P_value =0
mode: $Y = x_3 + x_5 + x_9 + x_{15}$;	R_square =0.0387142111	P_value =0
mode: $Y = x_3 + x_5 + x_{10} + x_{11}$;	R_square =0.01763684	P_value =0
mode: $Y = x_3 + x_5 + x_{10} + x_{12}$;	R_square =0.0175134493	P_value =0
mode: $Y = x_3 + x_5 + x_{10} + x_{13}$;	R_square =0.017654387	P_value =0
mode: $Y = x_3 + x_5 + x_{10} + x_{14}$;	R_square =0.313580395	P_value =0
mode: $Y = x_3 + x_5 + x_{10} + x_{15}$;	R_square =0.0197794116	P_value =0
mode: $Y = x_3 + x_5 + x_{11} + x_{12}$;	R_square =0.0166045474	P_value =0
mode: $Y = x_3 + x_5 + x_{11} + x_{13}$;	R_square =0.017654387	P_value =0
mode: $Y = x_3 + x_5 + x_{11} + x_{14}$;	R_square =0.3098223295	P_value =0
mode: $Y = x_3 + x_5 + x_{11} + x_{15}$;	R_square =0.0189451014	P_value =0
mode: $Y = x_3 + x_5 + x_{12} + x_{13}$;	R_square =0.0172472111	P_value =0
mode: $Y = x_3 + x_5 + x_{12} + x_{14}$;	R_square =0.3096925314	P_value =0
mode: $Y = x_3 + x_5 + x_{12} + x_{15}$;	R_square =0.0186852171	P_value =0
mode: $Y = x_3 + x_5 + x_{13} + x_{14}$;	R_square =0.3104481275	P_value =0
mode: $Y = x_3 + x_5 + x_{13} + x_{15}$;	R_square =0.0175888866	P_value =0
mode: $Y = x_3 + x_5 + x_{14} + x_{15}$;	R_square =0.3055963715	P_value =0
mode: $Y = x_3 + x_6 + x_7 + x_8$;	R_square =0.0212508212	P_value =0
mode: $Y = x_3 + x_6 + x_7 + x_9$;	R_square =0.0212508212	P_value =0
mode: $Y = x_3 + x_6 + x_7 + x_{10}$;	R_square =0.0134640015	P_value =0
mode: $Y = x_3 + x_6 + x_7 + x_{11}$;	R_square =0.0139146128	P_value =0
mode: $Y = x_3 + x_6 + x_7 + x_{12}$;	R_square =0.014214567	P_value =0

mode: Y = x3 + x6 + x7 + x13;	R_square =0.0124456438	P_value =0
mode: Y = x3 + x6 + x7 + x14;	R_square =0.3135627869	P_value =0
mode: Y = x3 + x6 + x7 + x15;	R_square =0.0171398075	P_value =0
mode: Y = x3 + x6 + x8 + x9;	R_square =0.0141855004	P_value =0
mode: Y = x3 + x6 + x8 + x10;	R_square =0.0154185286	P_value =0
mode: Y = x3 + x6 + x8 + x11;	R_square =0.0161062558	P_value =0
mode: Y = x3 + x6 + x8 + x12;	R_square =0.0163217306	P_value =0
mode: Y = x3 + x6 + x8 + x14;	R_square =0.3257421089	P_value =0
mode: Y = x3 + x6 + x8 + x15;	R_square =0.021417398	P_value =0
mode: Y = x3 + x6 + x9 + x10;	R_square =0.0154185286	P_value =0
mode: Y = x3 + x6 + x9 + x11;	R_square =0.0161062558	P_value =0
mode: Y = x3 + x6 + x9 + x12;	R_square =0.0163217306	P_value =0
mode: Y = x3 + x6 + x9 + x13;	R_square =0.0141998409	P_value =0
mode: Y = x3 + x6 + x9 + x14;	R_square =0.3257421089	P_value =0
mode: Y = x3 + x6 + x9 + x15;	R_square =0.021417398	P_value =0
mode: Y = x3 + x6 + x10 + x11;	R_square =0.0061543443	P_value =0
mode: Y = x3 + x6 + x10 + x12;	R_square =0.0068126754	P_value =0
mode: Y = x3 + x6 + x10 + x13;	R_square =0.0061780146	P_value =0
mode: Y = x3 + x6 + x10 + x14;	R_square =0.3114585254	P_value =0
mode: Y = x3 + x6 + x10 + x15;	R_square =0.0095738368	P_value =0
mode: Y = x3 + x6 + x11 + x12;	R_square =0.0073778941	P_value =0
mode: Y = x3 + x6 + x11 + x13;	R_square =0.0061780146	P_value =0
mode: Y = x3 + x6 + x11 + x14;	R_square =0.3106548259	P_value =0
mode: Y = x3 + x6 + x11 + x15;	R_square =0.0101849139	P_value =0
mode: Y = x3 + x6 + x12 + x13;	R_square =0.0067514301	P_value =0
mode: Y = x3 + x6 + x12 + x14;	R_square =0.3107133342	P_value =0
mode: Y = x3 + x6 + x12 + x15;	R_square =0.0105881256	P_value =0
mode: Y = x3 + x6 + x13 + x14;	R_square =0.3094886274	P_value =0
mode: Y = x3 + x6 + x13 + x15;	R_square =0.0097698453	P_value =0
mode: Y = x3 + x6 + x14 + x15;	R_square =0.3078624767	P_value =0
mode: Y = x3 + x7 + x8 + x9;	R_square =0.0207216845	P_value =0
mode: Y = x3 + x7 + x8 + x10;	R_square =0.0221964083	P_value =0
mode: Y = x3 + x7 + x8 + x11;	R_square =0.0222885155	P_value =0
mode: Y = x3 + x7 + x8 + x12;	R_square =0.0220683467	P_value =0
mode: Y = x3 + x7 + x8 + x13;	R_square =0.0210160428	P_value =0
mode: Y = x3 + x7 + x8 + x14;	R_square =0.3265212592	P_value =0
mode: Y = x3 + x7 + x8 + x15;	R_square =0.0278064676	P_value =0
mode: Y = x3 + x7 + x9 + x10;	R_square =0.0221964083	P_value =0
mode: Y = x3 + x7 + x9 + x11;	R_square =0.0222885155	P_value =0
mode: Y = x3 + x7 + x9 + x12;	R_square =0.0220683467	P_value =0
mode: Y = x3 + x7 + x9 + x13;	R_square =0.0210160428	P_value =0
mode: Y = x3 + x7 + x9 + x14;	R_square =0.3265212592	P_value =0

mode: $Y = x_3 + x_7 + x_9 + x_{15}$;	$R_square = 0.0278064676$	$P_value = 0$
mode: $Y = x_3 + x_7 + x_{10} + x_{11}$;	$R_square = 0.013672829$	$P_value = 0$
mode: $Y = x_3 + x_7 + x_{10} + x_{12}$;	$R_square = 0.0138132157$	$P_value = 0$
mode: $Y = x_3 + x_7 + x_{10} + x_{13}$;	$R_square = 0.0136933086$	$P_value = 0$
mode: $Y = x_3 + x_7 + x_{10} + x_{14}$;	$R_square = 0.3143129539$	$P_value = 0$
mode: $Y = x_3 + x_7 + x_{10} + x_{15}$;	$R_square = 0.017287009$	$P_value = 0$
mode: $Y = x_3 + x_7 + x_{11} + x_{12}$;	$R_square = 0.0136655583$	$P_value = 0$
mode: $Y = x_3 + x_7 + x_{11} + x_{13}$;	$R_square = 0.0136933086$	$P_value = 0$
mode: $Y = x_3 + x_7 + x_{11} + x_{14}$;	$R_square = 0.3116492448$	$P_value = 0$
mode: $Y = x_3 + x_7 + x_{11} + x_{15}$;	$R_square = 0.0172192919$	$P_value = 0$
mode: $Y = x_3 + x_7 + x_{12} + x_{13}$;	$R_square = 0.0136223848$	$P_value = 0$
mode: $Y = x_3 + x_7 + x_{12} + x_{14}$;	$R_square = 0.3114914068$	$P_value = 0$
mode: $Y = x_3 + x_7 + x_{12} + x_{15}$;	$R_square = 0.0171319741$	$P_value = 0$
mode: $Y = x_3 + x_7 + x_{13} + x_{14}$;	$R_square = 0.3121661741$	$P_value = 0$
mode: $Y = x_3 + x_7 + x_{13} + x_{15}$;	$R_square = 0.0170507443$	$P_value = 0$
mode: $Y = x_3 + x_7 + x_{14} + x_{15}$;	$R_square = 0.3088748893$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_9 + x_{10}$;	$R_square = 0.0118850943$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_9 + x_{11}$;	$R_square = 0.0115326577$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_9 + x_{12}$;	$R_square = 0.0112272968$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_9 + x_{13}$;	$R_square = 0.0107345012$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_9 + x_{14}$;	$R_square = 0.3185325306$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_9 + x_{15}$;	$R_square = 0.0167573998$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_{10} + x_{11}$;	$R_square = 0.0126652039$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_{10} + x_{12}$;	$R_square = 0.0124285907$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_{10} + x_{13}$;	$R_square = 0.0126844843$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_{10} + x_{14}$;	$R_square = 0.3235437252$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_{10} + x_{15}$;	$R_square = 0.0184239206$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_{11} + x_{12}$;	$R_square = 0.0118297879$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_{11} + x_{13}$;	$R_square = 0.0126844843$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_{11} + x_{14}$;	$R_square = 0.3199800388$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_{11} + x_{15}$;	$R_square = 0.0176294014$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_{12} + x_{13}$;	$R_square = 0.0121523301$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_{12} + x_{14}$;	$R_square = 0.3198332913$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_{12} + x_{15}$;	$R_square = 0.0173376921$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_{13} + x_{14}$;	$R_square = 0.3215896885$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_{13} + x_{15}$;	$R_square = 0.0178840762$	$P_value = 0$
mode: $Y = x_3 + x_8 + x_{14} + x_{15}$;	$R_square = 0.3176241103$	$P_value = 0$
mode: $Y = x_3 + x_9 + x_{10} + x_{11}$;	$R_square = 0.0126652039$	$P_value = 0$
mode: $Y = x_3 + x_9 + x_{10} + x_{12}$;	$R_square = 0.0124285907$	$P_value = 0$
mode: $Y = x_3 + x_9 + x_{10} + x_{13}$;	$R_square = 0.0126844843$	$P_value = 0$
mode: $Y = x_3 + x_9 + x_{10} + x_{14}$;	$R_square = 0.3235437252$	$P_value = 0$
mode: $Y = x_3 + x_9 + x_{10} + x_{15}$;	$R_square = 0.0184239206$	$P_value = 0$

mode: Y = x3 + x9 + x11 + x12;	R_square =0.0118297879	P_value =0
mode: Y = x3 + x9 + x11 + x13;	R_square =0.0126844843	P_value =0
mode: Y = x3 + x9 + x11 + x14;	R_square =0.3199800388	P_value =0
mode: Y = x3 + x9 + x11 + x15;	R_square =0.0176294014	P_value =0
mode: Y = x3 + x9 + x12 + x13;	R_square =0.0121523301	P_value =0
mode: Y = x3 + x9 + x12 + x14;	R_square =0.3198332913	P_value =0
mode: Y = x3 + x9 + x12 + x15;	R_square =0.0173376921	P_value =0
mode: Y = x3 + x9 + x13 + x14;	R_square =0.3215896885	P_value =0
mode: Y = x3 + x9 + x13 + x15;	R_square =0.0178840762	P_value =0
mode: Y = x3 + x9 + x14 + x15;	R_square =0.3176241103	P_value =0
mode: Y = x3 + x10 + x11 + x12;	R_square =0.0025017716	P_value =0
mode: Y = x3 + x10 + x11 + x13;	R_square =0.0017542009	P_value =0
mode: Y = x3 + x10 + x11 + x14;	R_square =0.3055119814	P_value =0
mode: Y = x3 + x10 + x11 + x15;	R_square =0.0061042697	P_value =0
mode: Y = x3 + x10 + x12 + x13;	R_square =0.0025223956	P_value =0
mode: Y = x3 + x10 + x12 + x14;	R_square =0.3053376582	P_value =0
mode: Y = x3 + x10 + x12 + x15;	R_square =0.0060548495	P_value =0
mode: Y = x3 + x10 + x13 + x14;	R_square =0.3055175692	P_value =0
mode: Y = x3 + x10 + x13 + x15;	R_square =0.0061232329	P_value =0
mode: Y = x3 + x10 + x14 + x15;	R_square =0.3034511897	P_value =0
mode: Y = x3 + x11 + x12 + x13;	R_square =0.0025223957	P_value =0
mode: Y = x3 + x11 + x12 + x14;	R_square =0.3019452696	P_value =0
mode: Y = x3 + x11 + x12 + x15;	R_square =0.005338755	P_value =0
mode: Y = x3 + x11 + x13 + x14;	R_square =0.3055175692	P_value =0
mode: Y = x3 + x11 + x13 + x15;	R_square =0.0061232329	P_value =0
mode: Y = x3 + x11 + x14 + x15;	R_square =0.2998096357	P_value =0
mode: Y = x3 + x12 + x13 + x14;	R_square =0.3050878969	P_value =0
mode: Y = x3 + x12 + x13 + x15;	R_square =0.0057991143	P_value =0
mode: Y = x3 + x12 + x14 + x15;	R_square =0.2996610713	P_value =0
mode: Y = x3 + x13 + x14 + x15;	R_square =0.3024255894	P_value =0
mode: Y = x4 + x5 + x6 + x7;	R_square =0.0195153848	P_value =0
mode: Y = x4 + x5 + x6 + x8;	R_square =0.0336572889	P_value =0
mode: Y = x4 + x5 + x6 + x9;	R_square =0.0336572889	P_value =0
mode: Y = x4 + x5 + x6 + x10;	R_square =0.0181323115	P_value =0
mode: Y = x4 + x5 + x6 + x11;	R_square =0.0185036724	P_value =0
mode: Y = x4 + x5 + x6 + x12;	R_square =0.0187411182	P_value =0
mode: Y = x4 + x5 + x6 + x13;	R_square =0.0148532481	P_value =0
mode: Y = x4 + x5 + x6 + x14;	R_square =0.3138743704	P_value =0
mode: Y = x4 + x5 + x6 + x15;	R_square =0.0184713278	P_value =0
mode: Y = x4 + x5 + x7 + x8;	R_square =0.0350958521	P_value =0
mode: Y = x4 + x5 + x7 + x9;	R_square =0.0350958521	P_value =0
mode: Y = x4 + x5 + x7 + x10;	R_square =0.0220899902	P_value =0

mode: Y = x4 + x5 + x7 + x11;	R_square =0.0217999761	P_value =0
mode: Y = x4 + x5 + x7 + x12;	R_square =0.0216904821	P_value =0
mode: Y = x4 + x5 + x7 + x13;	R_square =0.0193449047	P_value =0
mode: Y = x4 + x5 + x7 + x14;	R_square =0.3135773936	P_value =0
mode: Y = x4 + x5 + x7 + x15;	R_square =0.0227413595	P_value =0
mode: Y = x4 + x5 + x8 + x9;	R_square =0.0317966947	P_value =0
mode: Y = x4 + x5 + x8 + x10;	R_square =0.0330649354	P_value =0
mode: Y = x4 + x5 + x8 + x11;	R_square =0.0318976777	P_value =0
mode: Y = x4 + x5 + x8 + x12;	R_square =0.0314946319	P_value =0
mode: Y = x4 + x5 + x8 + x13;	R_square =0.0329511193	P_value =0
mode: Y = x4 + x5 + x8 + x14;	R_square =0.3288393073	P_value =0
mode: Y = x4 + x5 + x8 + x15;	R_square =0.0375959051	P_value =0
mode: Y = x4 + x5 + x9 + x10;	R_square =0.0330649354	P_value =0
mode: Y = x4 + x5 + x9 + x11;	R_square =0.0318976777	P_value =0
mode: Y = x4 + x5 + x9 + x12;	R_square =0.0314946319	P_value =0
mode: Y = x4 + x5 + x9 + x13;	R_square =0.0329511193	P_value =0
mode: Y = x4 + x5 + x9 + x14;	R_square =0.3288393073	P_value =0
mode: Y = x4 + x5 + x9 + x15;	R_square =0.0375959051	P_value =0
mode: Y = x4 + x5 + x10 + x11;	R_square =0.0162354632	P_value =0
mode: Y = x4 + x5 + x10 + x12;	R_square =0.0161486522	P_value =0
mode: Y = x4 + x5 + x10 + x13;	R_square =0.0162532695	P_value =0
mode: Y = x4 + x5 + x10 + x14;	R_square =0.3127495077	P_value =0
mode: Y = x4 + x5 + x10 + x15;	R_square =0.0186885031	P_value =0
mode: Y = x4 + x5 + x11 + x12;	R_square =0.0151999137	P_value =0
mode: Y = x4 + x5 + x11 + x13;	R_square =0.0162532695	P_value =0
mode: Y = x4 + x5 + x11 + x14;	R_square =0.3089528557	P_value =0
mode: Y = x4 + x5 + x11 + x15;	R_square =0.0178291458	P_value =0
mode: Y = x4 + x5 + x12 + x13;	R_square =0.0158765908	P_value =0
mode: Y = x4 + x5 + x12 + x14;	R_square =0.3088167209	P_value =0
mode: Y = x4 + x5 + x12 + x15;	R_square =0.0175867683	P_value =0
mode: Y = x4 + x5 + x13 + x14;	R_square =0.3095995215	P_value =0
mode: Y = x4 + x5 + x13 + x15;	R_square =0.0161615209	P_value =0
mode: Y = x4 + x5 + x14 + x15;	R_square =0.3047763002	P_value =0
mode: Y = x4 + x6 + x7 + x8;	R_square =0.020784441	P_value =0
mode: Y = x4 + x6 + x7 + x9;	R_square =0.020784441	P_value =0
mode: Y = x4 + x6 + x7 + x10;	R_square =0.0131913069	P_value =0
mode: Y = x4 + x6 + x7 + x11;	R_square =0.0136279945	P_value =0
mode: Y = x4 + x6 + x7 + x12;	R_square =0.013937084	P_value =0
mode: Y = x4 + x6 + x7 + x13;	R_square =0.012386409	P_value =0
mode: Y = x4 + x6 + x7 + x14;	R_square =0.3134995226	P_value =0
mode: Y = x4 + x6 + x7 + x15;	R_square =0.0170543095	P_value =0
mode: Y = x4 + x6 + x8 + x9;	R_square =0.013877612	P_value =0

mode: Y = x4 + x6 + x8 + x10;	R_square =0.0144318556	P_value =0
mode: Y = x4 + x6 + x8 + x11;	R_square =0.0150696949	P_value =0
mode: Y = x4 + x6 + x8 + x12;	R_square =0.015261569	P_value =0
mode: Y = x4 + x6 + x8 + x13;	R_square =0.013896508	P_value =0
mode: Y = x4 + x6 + x8 + x14;	R_square =0.3251577525	P_value =0
mode: Y = x4 + x6 + x8 + x15;	R_square =0.0210449365	P_value =0
mode: Y = x4 + x6 + x9 + x10;	R_square =0.0144318556	P_value =0
mode: Y = x4 + x6 + x9 + x11;	R_square =0.0150696949	P_value =0
mode: Y = x4 + x6 + x9 + x12;	R_square =0.015261569	P_value =0
mode: Y = x4 + x6 + x9 + x13;	R_square =0.013896508	P_value =0
mode: Y = x4 + x6 + x9 + x14;	R_square =0.3251577525	P_value =0
mode: Y = x4 + x6 + x9 + x15;	R_square =0.0210449365	P_value =0
mode: Y = x4 + x6 + x10 + x11;	R_square =0.0059318988	P_value =0
mode: Y = x4 + x6 + x10 + x12;	R_square =0.0066008799	P_value =0
mode: Y = x4 + x6 + x10 + x13;	R_square =0.0059554957	P_value =0
mode: Y = x4 + x6 + x10 + x14;	R_square =0.3112676658	P_value =0
mode: Y = x4 + x6 + x10 + x15;	R_square =0.0094397359	P_value =0
mode: Y = x4 + x6 + x11 + x12;	R_square =0.0071548607	P_value =0
mode: Y = x4 + x6 + x11 + x13;	R_square =0.0059554957	P_value =0
mode: Y = x4 + x6 + x11 + x14;	R_square =0.3104374884	P_value =0
mode: Y = x4 + x6 + x11 + x15;	R_square =0.0100434505	P_value =0
mode: Y = x4 + x6 + x12 + x13;	R_square =0.0065354178	P_value =0
mode: Y = x4 + x6 + x12 + x14;	R_square =0.3104991111	P_value =0
mode: Y = x4 + x6 + x12 + x15;	R_square =0.0104517792	P_value =0
mode: Y = x4 + x6 + x13 + x14;	R_square =0.3094331976	P_value =0
mode: Y = x4 + x6 + x13 + x15;	R_square =0.009698322	P_value =0
mode: Y = x4 + x6 + x14 + x15;	R_square =0.3077840352	P_value =0
mode: Y = x4 + x7 + x8 + x9;	R_square =0.02029034	P_value =0
mode: Y = x4 + x7 + x8 + x10;	R_square =0.0210807758	P_value =0
mode: Y = x4 + x7 + x8 + x11;	R_square =0.0211112284	P_value =0
mode: Y = x4 + x7 + x8 + x12;	R_square =0.0208906127	P_value =0
mode: Y = x4 + x7 + x8 + x13;	R_square =0.0205964022	P_value =0
mode: Y = x4 + x7 + x8 + x14;	R_square =0.3258927083	P_value =0
mode: Y = x4 + x7 + x8 + x15;	R_square =0.0273055698	P_value =0
mode: Y = x4 + x7 + x9 + x10;	R_square =0.0210807758	P_value =0
mode: Y = x4 + x7 + x9 + x11;	R_square =0.0211112284	P_value =0
mode: Y = x4 + x7 + x9 + x12;	R_square =0.0208906127	P_value =0
mode: Y = x4 + x7 + x9 + x13;	R_square =0.0205964022	P_value =0
mode: Y = x4 + x7 + x9 + x14;	R_square =0.3258927083	P_value =0
mode: Y = x4 + x7 + x9 + x15;	R_square =0.0273055698	P_value =0
mode: Y = x4 + x7 + x10 + x11;	R_square =0.0134233273	P_value =0
mode: Y = x4 + x7 + x10 + x12;	R_square =0.0135765161	P_value =0

mode: $Y = x_4 + x_7 + x_{10} + x_{13}$;	$R_square = 0.0134437973$	$P_value = 0$
mode: $Y = x_4 + x_7 + x_{10} + x_{14}$;	$R_square = 0.3141249432$	$P_value = 0$
mode: $Y = x_4 + x_7 + x_{10} + x_{15}$;	$R_square = 0.0171325728$	$P_value = 0$
mode: $Y = x_4 + x_7 + x_{11} + x_{12}$;	$R_square = 0.0134074513$	$P_value = 0$
mode: $Y = x_4 + x_7 + x_{11} + x_{13}$;	$R_square = 0.0134437973$	$P_value = 0$
mode: $Y = x_4 + x_7 + x_{11} + x_{14}$;	$R_square = 0.3114294738$	$P_value = 0$
mode: $Y = x_4 + x_7 + x_{11} + x_{15}$;	$R_square = 0.0170503944$	$P_value = 0$
mode: $Y = x_4 + x_7 + x_{12} + x_{13}$;	$R_square = 0.0133824079$	$P_value = 0$
mode: $Y = x_4 + x_7 + x_{12} + x_{14}$;	$R_square = 0.3112717151$	$P_value = 0$
mode: $Y = x_4 + x_7 + x_{12} + x_{15}$;	$R_square = 0.0169693607$	$P_value = 0$
mode: $Y = x_4 + x_7 + x_{13} + x_{14}$;	$R_square = 0.3121197324$	$P_value = 0$
mode: $Y = x_4 + x_7 + x_{13} + x_{15}$;	$R_square = 0.016982819$	$P_value = 0$
mode: $Y = x_4 + x_7 + x_{14} + x_{15}$;	$R_square = 0.3088079951$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_9 + x_{10}$;	$R_square = 0.0111858627$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_9 + x_{11}$;	$R_square = 0.0107791048$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_9 + x_{12}$;	$R_square = 0.010475383$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_9 + x_{13}$;	$R_square = 0.0105582305$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_9 + x_{14}$;	$R_square = 0.3181770757$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_9 + x_{15}$;	$R_square = 0.0165323616$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_{10} + x_{11}$;	$R_square = 0.0119608951$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_{10} + x_{12}$;	$R_square = 0.0117272505$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_{10} + x_{13}$;	$R_square = 0.0119800064$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_{10} + x_{14}$;	$R_square = 0.3226579457$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_{10} + x_{15}$;	$R_square = 0.0176830389$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_{11} + x_{12}$;	$R_square = 0.0110707459$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_{11} + x_{13}$;	$R_square = 0.0119800063$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_{11} + x_{14}$;	$R_square = 0.3189922117$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_{11} + x_{15}$;	$R_square = 0.0168254995$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_{12} + x_{13}$;	$R_square = 0.0114461053$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_{12} + x_{14}$;	$R_square = 0.3188472649$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_{12} + x_{15}$;	$R_square = 0.0165357727$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_{13} + x_{14}$;	$R_square = 0.3212569854$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_{13} + x_{15}$;	$R_square = 0.0176688083$	$P_value = 0$
mode: $Y = x_4 + x_8 + x_{14} + x_{15}$;	$R_square = 0.3172269688$	$P_value = 0$
mode: $Y = x_4 + x_9 + x_{10} + x_{11}$;	$R_square = 0.0119608951$	$P_value = 0$
mode: $Y = x_4 + x_9 + x_{10} + x_{12}$;	$R_square = 0.0117272505$	$P_value = 0$
mode: $Y = x_4 + x_9 + x_{10} + x_{13}$;	$R_square = 0.0119800064$	$P_value = 0$
mode: $Y = x_4 + x_9 + x_{10} + x_{14}$;	$R_square = 0.3226579457$	$P_value = 0$
mode: $Y = x_4 + x_9 + x_{10} + x_{15}$;	$R_square = 0.0176830389$	$P_value = 0$
mode: $Y = x_4 + x_9 + x_{11} + x_{12}$;	$R_square = 0.0110707459$	$P_value = 0$
mode: $Y = x_4 + x_9 + x_{11} + x_{13}$;	$R_square = 0.0119800063$	$P_value = 0$
mode: $Y = x_4 + x_9 + x_{11} + x_{14}$;	$R_square = 0.3189922117$	$P_value = 0$

mode: Y = x4 + x9 + x11 + x15;	R_square =0.0168254995	P_value =0
mode: Y = x4 + x9 + x12 + x13;	R_square =0.0114461053	P_value =0
mode: Y = x4 + x9 + x12 + x14;	R_square =0.3188472649	P_value =0
mode: Y = x4 + x9 + x12 + x15;	R_square =0.0165357727	P_value =0
mode: Y = x4 + x9 + x13 + x14;	R_square =0.3212569854	P_value =0
mode: Y = x4 + x9 + x13 + x15;	R_square =0.0176688083	P_value =0
mode: Y = x4 + x9 + x14 + x15;	R_square =0.3172269688	P_value =0
mode: Y = x4 + x10 + x11 + x12;	R_square =0.0023647094	P_value =0
mode: Y = x4 + x10 + x11 + x13;	R_square =0.0016070755	P_value =0
mode: Y = x4 + x10 + x11 + x14;	R_square =0.3053998465	P_value =0
mode: Y = x4 + x10 + x11 + x15;	R_square =0.0060291928	P_value =0
mode: Y = x4 + x10 + x12 + x13;	R_square =0.0023853431	P_value =0
mode: Y = x4 + x10 + x12 + x14;	R_square =0.3052281219	P_value =0
mode: Y = x4 + x10 + x12 + x15;	R_square =0.0059859026	P_value =0
mode: Y = x4 + x10 + x13 + x14;	R_square =0.3054054963	P_value =0
mode: Y = x4 + x10 + x13 + x15;	R_square =0.0060481671	P_value =0
mode: Y = x4 + x10 + x14 + x15;	R_square =0.3033840902	P_value =0
mode: Y = x4 + x11 + x12 + x13;	R_square =0.0023853431	P_value =0
mode: Y = x4 + x11 + x12 + x14;	R_square =0.301806488	P_value =0
mode: Y = x4 + x11 + x12 + x15;	R_square =0.005254293	P_value =0
mode: Y = x4 + x11 + x13 + x14;	R_square =0.3054054963	P_value =0
mode: Y = x4 + x11 + x13 + x15;	R_square =0.0060481671	P_value =0
mode: Y = x4 + x11 + x14 + x15;	R_square =0.2997203702	P_value =0
mode: Y = x4 + x12 + x13 + x14;	R_square =0.3049771544	P_value =0
mode: Y = x4 + x12 + x13 + x15;	R_square =0.005728646	P_value =0
mode: Y = x4 + x12 + x14 + x15;	R_square =0.2995714443	P_value =0
mode: Y = x4 + x13 + x14 + x15;	R_square =0.3023807233	P_value =0
mode: Y = x5 + x6 + x7 + x8;	R_square =0.0355738979	P_value =0
mode: Y = x5 + x6 + x7 + x9;	R_square =0.0355738979	P_value =0
mode: Y = x5 + x6 + x7 + x10;	R_square =0.0224423413	P_value =0
mode: Y = x5 + x6 + x7 + x11;	R_square =0.0225848311	P_value =0
mode: Y = x5 + x6 + x7 + x12;	R_square =0.0226742012	P_value =0
mode: Y = x5 + x6 + x7 + x13;	R_square =0.0196904272	P_value =0
mode: Y = x5 + x6 + x7 + x14;	R_square =0.3164401455	P_value =0
mode: Y = x5 + x6 + x7 + x15;	R_square =0.023335617	P_value =0
mode: Y = x5 + x6 + x8 + x9;	R_square =0.0336572889	P_value =0
mode: Y = x5 + x6 + x8 + x10;	R_square =0.0341707849	P_value =0
mode: Y = x5 + x6 + x8 + x11;	R_square =0.0340338266	P_value =0
mode: Y = x5 + x6 + x8 + x12;	R_square =0.0338081511	P_value =0
mode: Y = x5 + x6 + x8 + x13;	R_square =0.0340567035	P_value =0
mode: Y = x5 + x6 + x8 + x14;	R_square =0.3336839085	P_value =0
mode: Y = x5 + x6 + x8 + x15;	R_square =0.0398409005	P_value =0

mode: $Y = x_5 + x_6 + x_9 + x_{10}$;	$R_square = 0.0341707849$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_9 + x_{11}$;	$R_square = 0.0340338266$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_9 + x_{12}$;	$R_square = 0.0338081511$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_9 + x_{13}$;	$R_square = 0.0340567035$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_9 + x_{14}$;	$R_square = 0.3336839085$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_9 + x_{15}$;	$R_square = 0.0398409005$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_{10} + x_{11}$;	$R_square = 0.0188009763$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_{10} + x_{12}$;	$R_square = 0.0190787323$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_{10} + x_{13}$;	$R_square = 0.0188203838$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_{10} + x_{14}$;	$R_square = 0.3171347199$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_{10} + x_{15}$;	$R_square = 0.0211476971$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_{11} + x_{12}$;	$R_square = 0.0192811834$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_{11} + x_{13}$;	$R_square = 0.0188203838$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_{11} + x_{14}$;	$R_square = 0.3158738932$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_{11} + x_{15}$;	$R_square = 0.021400088$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_{12} + x_{13}$;	$R_square = 0.0189495118$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_{12} + x_{14}$;	$R_square = 0.315820759$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_{12} + x_{15}$;	$R_square = 0.0214984391$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_{13} + x_{14}$;	$R_square = 0.3140214668$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_{13} + x_{15}$;	$R_square = 0.0188507972$	$P_value = 0$
mode: $Y = x_5 + x_6 + x_{14} + x_{15}$;	$R_square = 0.3116382332$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_8 + x_9$;	$R_square = 0.0350958521$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_8 + x_{10}$;	$R_square = 0.0359747521$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_8 + x_{11}$;	$R_square = 0.0352538035$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_8 + x_{12}$;	$R_square = 0.0348857104$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_8 + x_{13}$;	$R_square = 0.0358868969$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_8 + x_{14}$;	$R_square = 0.3321755876$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_8 + x_{15}$;	$R_square = 0.0412430347$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_9 + x_{10}$;	$R_square = 0.0359747521$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_9 + x_{11}$;	$R_square = 0.0352538035$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_9 + x_{12}$;	$R_square = 0.0348857104$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_9 + x_{13}$;	$R_square = 0.0358868969$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_9 + x_{14}$;	$R_square = 0.3321755876$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_9 + x_{15}$;	$R_square = 0.0412430347$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_{10} + x_{11}$;	$R_square = 0.0226970861$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_{10} + x_{12}$;	$R_square = 0.022675338$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_{10} + x_{13}$;	$R_square = 0.0227149226$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_{10} + x_{14}$;	$R_square = 0.3182382529$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_{10} + x_{15}$;	$R_square = 0.025341676$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_{11} + x_{12}$;	$R_square = 0.0221417779$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_{11} + x_{13}$;	$R_square = 0.0227149226$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_{11} + x_{14}$;	$R_square = 0.3151343982$	$P_value = 0$

mode: $Y = x_5 + x_7 + x_{11} + x_{15}$;	$R_square = 0.0248988843$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_{12} + x_{13}$;	$R_square = 0.0224512602$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_{12} + x_{14}$;	$R_square = 0.3149880054$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_{12} + x_{15}$;	$R_square = 0.0247105229$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_{13} + x_{14}$;	$R_square = 0.3153972797$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_{13} + x_{15}$;	$R_square = 0.0234904658$	$P_value = 0$
mode: $Y = x_5 + x_7 + x_{14} + x_{15}$;	$R_square = 0.3114186453$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_9 + x_{10}$;	$R_square = 0.0330649354$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_9 + x_{11}$;	$R_square = 0.0318976777$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_9 + x_{12}$;	$R_square = 0.0314946319$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_9 + x_{13}$;	$R_square = 0.0329511193$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_9 + x_{14}$;	$R_square = 0.3288393073$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_9 + x_{15}$;	$R_square = 0.0375959051$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_{10} + x_{11}$;	$R_square = 0.0336810675$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_{10} + x_{12}$;	$R_square = 0.0332803881$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_{10} + x_{13}$;	$R_square = 0.0336954504$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_{10} + x_{14}$;	$R_square = 0.3337766744$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_{10} + x_{15}$;	$R_square = 0.0388320183$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_{11} + x_{12}$;	$R_square = 0.0319466203$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_{11} + x_{13}$;	$R_square = 0.0336954504$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_{11} + x_{14}$;	$R_square = 0.3294078097$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_{11} + x_{15}$;	$R_square = 0.0371773466$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_{12} + x_{13}$;	$R_square = 0.0329653314$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_{12} + x_{14}$;	$R_square = 0.3293788979$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_{12} + x_{15}$;	$R_square = 0.0368122024$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_{13} + x_{14}$;	$R_square = 0.3325580812$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_{13} + x_{15}$;	$R_square = 0.0392589249$	$P_value = 0$
mode: $Y = x_5 + x_8 + x_{14} + x_{15}$;	$R_square = 0.3276499264$	$P_value = 0$
mode: $Y = x_5 + x_9 + x_{10} + x_{11}$;	$R_square = 0.0336810675$	$P_value = 0$
mode: $Y = x_5 + x_9 + x_{10} + x_{12}$;	$R_square = 0.0332803881$	$P_value = 0$
mode: $Y = x_5 + x_9 + x_{10} + x_{13}$;	$R_square = 0.0336954504$	$P_value = 0$
mode: $Y = x_5 + x_9 + x_{10} + x_{14}$;	$R_square = 0.3337766744$	$P_value = 0$
mode: $Y = x_5 + x_9 + x_{10} + x_{15}$;	$R_square = 0.0388320183$	$P_value = 0$
mode: $Y = x_5 + x_9 + x_{11} + x_{12}$;	$R_square = 0.0319466203$	$P_value = 0$
mode: $Y = x_5 + x_9 + x_{11} + x_{13}$;	$R_square = 0.0336954504$	$P_value = 0$
mode: $Y = x_5 + x_9 + x_{11} + x_{14}$;	$R_square = 0.3294078097$	$P_value = 0$
mode: $Y = x_5 + x_9 + x_{11} + x_{15}$;	$R_square = 0.0371773466$	$P_value = 0$
mode: $Y = x_5 + x_9 + x_{12} + x_{13}$;	$R_square = 0.0329653314$	$P_value = 0$
mode: $Y = x_5 + x_9 + x_{12} + x_{14}$;	$R_square = 0.3293788979$	$P_value = 0$
mode: $Y = x_5 + x_9 + x_{12} + x_{15}$;	$R_square = 0.0368122024$	$P_value = 0$
mode: $Y = x_5 + x_9 + x_{13} + x_{14}$;	$R_square = 0.3325580812$	$P_value = 0$
mode: $Y = x_5 + x_9 + x_{13} + x_{15}$;	$R_square = 0.0392589249$	$P_value = 0$

mode: $Y = x_5 + x_9 + x_{14} + x_{15}$;	$R_square = 0.3276499264$	$P_value = 0$
mode: $Y = x_5 + x_{10} + x_{11} + x_{12}$;	$R_square = 0.0167381437$	$P_value = 0$
mode: $Y = x_5 + x_{10} + x_{11} + x_{13}$;	$R_square = 0.0162532695$	$P_value = 0$
mode: $Y = x_5 + x_{10} + x_{11} + x_{14}$;	$R_square = 0.3127881334$	$P_value = 0$
mode: $Y = x_5 + x_{10} + x_{11} + x_{15}$;	$R_square = 0.0192993826$	$P_value = 0$
mode: $Y = x_5 + x_{10} + x_{12} + x_{13}$;	$R_square = 0.0167557052$	$P_value = 0$
mode: $Y = x_5 + x_{10} + x_{12} + x_{14}$;	$R_square = 0.3125882565$	$P_value = 0$
mode: $Y = x_5 + x_{10} + x_{12} + x_{15}$;	$R_square = 0.0191214646$	$P_value = 0$
mode: $Y = x_5 + x_{10} + x_{13} + x_{14}$;	$R_square = 0.3127933126$	$P_value = 0$
mode: $Y = x_5 + x_{10} + x_{13} + x_{15}$;	$R_square = 0.0193155168$	$P_value = 0$
mode: $Y = x_5 + x_{10} + x_{14} + x_{15}$;	$R_square = 0.3101918221$	$P_value = 0$
mode: $Y = x_5 + x_{11} + x_{12} + x_{13}$;	$R_square = 0.0167557052$	$P_value = 0$
mode: $Y = x_5 + x_{11} + x_{12} + x_{14}$;	$R_square = 0.308803$	$P_value = 0$
mode: $Y = x_5 + x_{11} + x_{12} + x_{15}$;	$R_square = 0.0180170766$	$P_value = 0$
mode: $Y = x_5 + x_{11} + x_{13} + x_{14}$;	$R_square = 0.3127933126$	$P_value = 0$
mode: $Y = x_5 + x_{11} + x_{13} + x_{15}$;	$R_square = 0.0193155168$	$P_value = 0$
mode: $Y = x_5 + x_{11} + x_{14} + x_{15}$;	$R_square = 0.3061330371$	$P_value = 0$
mode: $Y = x_5 + x_{12} + x_{13} + x_{14}$;	$R_square = 0.3123427566$	$P_value = 0$
mode: $Y = x_5 + x_{12} + x_{13} + x_{15}$;	$R_square = 0.018848944$	$P_value = 0$
mode: $Y = x_5 + x_{12} + x_{14} + x_{15}$;	$R_square = 0.3060270608$	$P_value = 0$
mode: $Y = x_5 + x_{13} + x_{14} + x_{15}$;	$R_square = 0.3076648114$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_8 + x_9$;	$R_square = 0.020784441$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_8 + x_{10}$;	$R_square = 0.0213622046$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_8 + x_{11}$;	$R_square = 0.0217384117$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_8 + x_{12}$;	$R_square = 0.02170606$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_8 + x_{13}$;	$R_square = 0.0208882172$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_8 + x_{14}$;	$R_square = 0.3285119638$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_8 + x_{15}$;	$R_square = 0.0279686242$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_9 + x_{10}$;	$R_square = 0.0213622046$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_9 + x_{11}$;	$R_square = 0.0217384117$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_9 + x_{12}$;	$R_square = 0.02170606$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_9 + x_{13}$;	$R_square = 0.0208882172$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_9 + x_{14}$;	$R_square = 0.3285119638$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_9 + x_{15}$;	$R_square = 0.0279686242$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_{10} + x_{11}$;	$R_square = 0.0138741112$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_{10} + x_{12}$;	$R_square = 0.0142185066$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_{10} + x_{13}$;	$R_square = 0.013895475$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_{10} + x_{14}$;	$R_square = 0.3157711721$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_{10} + x_{15}$;	$R_square = 0.0175019392$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_{11} + x_{12}$;	$R_square = 0.0144998547$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_{11} + x_{13}$;	$R_square = 0.013895475$	$P_value = 0$
mode: $Y = x_6 + x_7 + x_{11} + x_{14}$;	$R_square = 0.3145383795$	$P_value = 0$

mode: Y = x6 + x7 + x11 + x15;	R_square =0.0177963527	P_value =0
mode: Y = x6 + x7 + x12 + x13;	R_square =0.0140918248	P_value =0
mode: Y = x6 + x7 + x12 + x14;	R_square =0.3144929801	P_value =0
mode: Y = x6 + x7 + x12 + x15;	R_square =0.0179191036	P_value =0
mode: Y = x6 + x7 + x13 + x14;	R_square =0.3136688953	P_value =0
mode: Y = x6 + x7 + x13 + x15;	R_square =0.0173519943	P_value =0
mode: Y = x6 + x7 + x14 + x15;	R_square =0.3117044065	P_value =0
mode: Y = x6 + x8 + x9 + x10;	R_square =0.0144318556	P_value =0
mode: Y = x6 + x8 + x9 + x11;	R_square =0.0150696949	P_value =0
mode: Y = x6 + x8 + x9 + x12;	R_square =0.015261569	P_value =0
mode: Y = x6 + x8 + x9 + x13;	R_square =0.013896508	P_value =0
mode: Y = x6 + x8 + x9 + x14;	R_square =0.3251577525	P_value =0
mode: Y = x6 + x8 + x9 + x15;	R_square =0.0210449365	P_value =0
mode: Y = x6 + x8 + x10 + x11;	R_square =0.0152409789	P_value =0
mode: Y = x6 + x8 + x10 + x12;	R_square =0.0154562241	P_value =0
mode: Y = x6 + x8 + x10 + x13;	R_square =0.0152628098	P_value =0
mode: Y = x6 + x8 + x10 + x14;	R_square =0.327297042	P_value =0
mode: Y = x6 + x8 + x10 + x15;	R_square =0.0211894726	P_value =0
mode: Y = x6 + x8 + x11 + x12;	R_square =0.0159584641	P_value =0
mode: Y = x6 + x8 + x11 + x13;	R_square =0.0152628098	P_value =0
mode: Y = x6 + x8 + x11 + x14;	R_square =0.3262003225	P_value =0
mode: Y = x6 + x8 + x11 + x15;	R_square =0.0216450801	P_value =0
mode: Y = x6 + x8 + x12 + x13;	R_square =0.0153514562	P_value =0
mode: Y = x6 + x8 + x12 + x14;	R_square =0.326112703	P_value =0
mode: Y = x6 + x8 + x12 + x15;	R_square =0.0218394797	P_value =0
mode: Y = x6 + x8 + x13 + x14;	R_square =0.3258484534	P_value =0
mode: Y = x6 + x8 + x13 + x15;	R_square =0.0212578487	P_value =0
mode: Y = x6 + x8 + x14 + x15;	R_square =0.3248052081	P_value =0
mode: Y = x6 + x9 + x10 + x11;	R_square =0.0152409789	P_value =0
mode: Y = x6 + x9 + x10 + x12;	R_square =0.0154562241	P_value =0
mode: Y = x6 + x9 + x10 + x13;	R_square =0.0152628098	P_value =0
mode: Y = x6 + x9 + x10 + x14;	R_square =0.327297042	P_value =0
mode: Y = x6 + x9 + x10 + x15;	R_square =0.0211894726	P_value =0
mode: Y = x6 + x9 + x11 + x12;	R_square =0.0159584641	P_value =0
mode: Y = x6 + x9 + x11 + x13;	R_square =0.0152628098	P_value =0
mode: Y = x6 + x9 + x11 + x14;	R_square =0.3262003225	P_value =0
mode: Y = x6 + x9 + x11 + x15;	R_square =0.0216450801	P_value =0
mode: Y = x6 + x9 + x12 + x13;	R_square =0.0153514562	P_value =0
mode: Y = x6 + x9 + x12 + x14;	R_square =0.326112703	P_value =0
mode: Y = x6 + x9 + x12 + x15;	R_square =0.0218394797	P_value =0
mode: Y = x6 + x9 + x13 + x14;	R_square =0.3258484534	P_value =0
mode: Y = x6 + x9 + x13 + x15;	R_square =0.0212578487	P_value =0

mode: $Y = x_6 + x_9 + x_{14} + x_{15}$;	$R_square = 0.3248052081$	$P_value = 0$
mode: $Y = x_6 + x_{10} + x_{11} + x_{12}$;	$R_square = 0.0072869942$	$P_value = 0$
mode: $Y = x_6 + x_{10} + x_{11} + x_{13}$;	$R_square = 0.0059554957$	$P_value = 0$
mode: $Y = x_6 + x_{10} + x_{11} + x_{14}$;	$R_square = 0.3113345886$	$P_value = 0$
mode: $Y = x_6 + x_{10} + x_{11} + x_{15}$;	$R_square = 0.0101649222$	$P_value = 0$
mode: $Y = x_6 + x_{10} + x_{12} + x_{13}$;	$R_square = 0.0073099477$	$P_value = 0$
mode: $Y = x_6 + x_{10} + x_{12} + x_{14}$;	$R_square = 0.3114416169$	$P_value = 0$
mode: $Y = x_6 + x_{10} + x_{12} + x_{15}$;	$R_square = 0.010605209$	$P_value = 0$
mode: $Y = x_6 + x_{10} + x_{13} + x_{14}$;	$R_square = 0.3113394417$	$P_value = 0$
mode: $Y = x_6 + x_{10} + x_{13} + x_{15}$;	$R_square = 0.010186236$	$P_value = 0$
mode: $Y = x_6 + x_{10} + x_{14} + x_{15}$;	$R_square = 0.309136824$	$P_value = 0$
mode: $Y = x_6 + x_{11} + x_{12} + x_{13}$;	$R_square = 0.0073099477$	$P_value = 0$
mode: $Y = x_6 + x_{11} + x_{12} + x_{14}$;	$R_square = 0.3105299816$	$P_value = 0$
mode: $Y = x_6 + x_{11} + x_{12} + x_{15}$;	$R_square = 0.0110528255$	$P_value = 0$
mode: $Y = x_6 + x_{11} + x_{13} + x_{14}$;	$R_square = 0.3113394417$	$P_value = 0$
mode: $Y = x_6 + x_{11} + x_{13} + x_{15}$;	$R_square = 0.010186236$	$P_value = 0$
mode: $Y = x_6 + x_{11} + x_{14} + x_{15}$;	$R_square = 0.3081380541$	$P_value = 0$
mode: $Y = x_6 + x_{12} + x_{13} + x_{14}$;	$R_square = 0.311309257$	$P_value = 0$
mode: $Y = x_6 + x_{12} + x_{13} + x_{15}$;	$R_square = 0.0105254665$	$P_value = 0$
mode: $Y = x_6 + x_{12} + x_{14} + x_{15}$;	$R_square = 0.3081279466$	$P_value = 0$
mode: $Y = x_6 + x_{13} + x_{14} + x_{15}$;	$R_square = 0.3078600232$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_9 + x_{10}$;	$R_square = 0.0210807758$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_9 + x_{11}$;	$R_square = 0.0211112284$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_9 + x_{12}$;	$R_square = 0.0208906127$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_9 + x_{13}$;	$R_square = 0.0205964022$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_9 + x_{14}$;	$R_square = 0.3258927083$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_9 + x_{15}$;	$R_square = 0.0273055698$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_{10} + x_{11}$;	$R_square = 0.0218036193$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_{10} + x_{12}$;	$R_square = 0.0216486912$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_{10} + x_{13}$;	$R_square = 0.0218224471$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_{10} + x_{14}$;	$R_square = 0.3296378968$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_{10} + x_{15}$;	$R_square = 0.0279375836$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_{11} + x_{12}$;	$R_square = 0.0214683992$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_{11} + x_{13}$;	$R_square = 0.0218224471$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_{11} + x_{14}$;	$R_square = 0.3267664149$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_{11} + x_{15}$;	$R_square = 0.0276138793$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_{12} + x_{13}$;	$R_square = 0.0214395979$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_{12} + x_{14}$;	$R_square = 0.326609077$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_{12} + x_{15}$;	$R_square = 0.027400917$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_{13} + x_{14}$;	$R_square = 0.3282246821$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_{13} + x_{15}$;	$R_square = 0.0279759072$	$P_value = 0$
mode: $Y = x_7 + x_8 + x_{14} + x_{15}$;	$R_square = 0.3253398587$	$P_value = 0$

mode: $Y = x_7 + x_9 + x_{10} + x_{11}$;	$R_square = 0.0218036193$	$P_value = 0$
mode: $Y = x_7 + x_9 + x_{10} + x_{12}$;	$R_square = 0.0216486912$	$P_value = 0$
mode: $Y = x_7 + x_9 + x_{10} + x_{13}$;	$R_square = 0.0218224471$	$P_value = 0$
mode: $Y = x_7 + x_9 + x_{10} + x_{14}$;	$R_square = 0.3296378968$	$P_value = 0$
mode: $Y = x_7 + x_9 + x_{10} + x_{15}$;	$R_square = 0.0279375836$	$P_value = 0$
mode: $Y = x_7 + x_9 + x_{11} + x_{12}$;	$R_square = 0.0214683992$	$P_value = 0$
mode: $Y = x_7 + x_9 + x_{11} + x_{13}$;	$R_square = 0.0218224471$	$P_value = 0$
mode: $Y = x_7 + x_9 + x_{11} + x_{14}$;	$R_square = 0.3267664149$	$P_value = 0$
mode: $Y = x_7 + x_9 + x_{11} + x_{15}$;	$R_square = 0.0276138793$	$P_value = 0$
mode: $Y = x_7 + x_9 + x_{12} + x_{13}$;	$R_square = 0.0214395979$	$P_value = 0$
mode: $Y = x_7 + x_9 + x_{12} + x_{14}$;	$R_square = 0.326609077$	$P_value = 0$
mode: $Y = x_7 + x_9 + x_{12} + x_{15}$;	$R_square = 0.027400917$	$P_value = 0$
mode: $Y = x_7 + x_9 + x_{13} + x_{14}$;	$R_square = 0.3282246821$	$P_value = 0$
mode: $Y = x_7 + x_9 + x_{13} + x_{15}$;	$R_square = 0.0279759072$	$P_value = 0$
mode: $Y = x_7 + x_9 + x_{14} + x_{15}$;	$R_square = 0.3253398587$	$P_value = 0$
mode: $Y = x_7 + x_{10} + x_{11} + x_{12}$;	$R_square = 0.0141910509$	$P_value = 0$
mode: $Y = x_7 + x_{10} + x_{11} + x_{13}$;	$R_square = 0.0134437973$	$P_value = 0$
mode: $Y = x_7 + x_{10} + x_{11} + x_{14}$;	$R_square = 0.3141581445$	$P_value = 0$
mode: $Y = x_7 + x_{10} + x_{11} + x_{15}$;	$R_square = 0.0177631976$	$P_value = 0$
mode: $Y = x_7 + x_{10} + x_{12} + x_{13}$;	$R_square = 0.0142110653$	$P_value = 0$
mode: $Y = x_7 + x_{10} + x_{12} + x_{14}$;	$R_square = 0.314001861$	$P_value = 0$
mode: $Y = x_7 + x_{10} + x_{12} + x_{15}$;	$R_square = 0.017763399$	$P_value = 0$
mode: $Y = x_7 + x_{10} + x_{13} + x_{14}$;	$R_square = 0.3141631466$	$P_value = 0$
mode: $Y = x_7 + x_{10} + x_{13} + x_{15}$;	$R_square = 0.0177815282$	$P_value = 0$
mode: $Y = x_7 + x_{10} + x_{14} + x_{15}$;	$R_square = 0.312173473$	$P_value = 0$
mode: $Y = x_7 + x_{11} + x_{12} + x_{13}$;	$R_square = 0.0142110653$	$P_value = 0$
mode: $Y = x_7 + x_{11} + x_{12} + x_{14}$;	$R_square = 0.3112623647$	$P_value = 0$
mode: $Y = x_7 + x_{11} + x_{12} + x_{15}$;	$R_square = 0.0174463654$	$P_value = 0$
mode: $Y = x_7 + x_{11} + x_{13} + x_{14}$;	$R_square = 0.3141631467$	$P_value = 0$
mode: $Y = x_7 + x_{11} + x_{13} + x_{15}$;	$R_square = 0.0177815282$	$P_value = 0$
mode: $Y = x_7 + x_{11} + x_{14} + x_{15}$;	$R_square = 0.3092281494$	$P_value = 0$
mode: $Y = x_7 + x_{12} + x_{13} + x_{14}$;	$R_square = 0.3137925696$	$P_value = 0$
mode: $Y = x_7 + x_{12} + x_{13} + x_{15}$;	$R_square = 0.0175644303$	$P_value = 0$
mode: $Y = x_7 + x_{12} + x_{14} + x_{15}$;	$R_square = 0.3090798623$	$P_value = 0$
mode: $Y = x_7 + x_{13} + x_{14} + x_{15}$;	$R_square = 0.3106760494$	$P_value = 0$
mode: $Y = x_8 + x_9 + x_{10} + x_{11}$;	$R_square = 0.0119608951$	$P_value = 0$
mode: $Y = x_8 + x_9 + x_{10} + x_{12}$;	$R_square = 0.0117272505$	$P_value = 0$
mode: $Y = x_8 + x_9 + x_{10} + x_{13}$;	$R_square = 0.0119800064$	$P_value = 0$
mode: $Y = x_8 + x_9 + x_{10} + x_{14}$;	$R_square = 0.3226579457$	$P_value = 0$
mode: $Y = x_8 + x_9 + x_{10} + x_{15}$;	$R_square = 0.0176830389$	$P_value = 0$
mode: $Y = x_8 + x_9 + x_{11} + x_{12}$;	$R_square = 0.0110707459$	$P_value = 0$
mode: $Y = x_8 + x_9 + x_{11} + x_{13}$;	$R_square = 0.0119800063$	$P_value = 0$

mode: $Y = x_8 + x_9 + x_{11} + x_{14}$;	$R_square = 0.3189922117$	$P_value = 0$
mode: $Y = x_8 + x_9 + x_{11} + x_{15}$;	$R_square = 0.0168254995$	$P_value = 0$
mode: $Y = x_8 + x_9 + x_{12} + x_{13}$;	$R_square = 0.0114461053$	$P_value = 0$
mode: $Y = x_8 + x_9 + x_{12} + x_{14}$;	$R_square = 0.3188472649$	$P_value = 0$
mode: $Y = x_8 + x_9 + x_{12} + x_{15}$;	$R_square = 0.0165357727$	$P_value = 0$
mode: $Y = x_8 + x_9 + x_{13} + x_{14}$;	$R_square = 0.3212569854$	$P_value = 0$
mode: $Y = x_8 + x_9 + x_{13} + x_{15}$;	$R_square = 0.0176688083$	$P_value = 0$
mode: $Y = x_8 + x_9 + x_{14} + x_{15}$;	$R_square = 0.3172269688$	$P_value = 0$
mode: $Y = x_8 + x_{10} + x_{11} + x_{12}$;	$R_square = 0.01245625$	$P_value = 0$
mode: $Y = x_8 + x_{10} + x_{11} + x_{13}$;	$R_square = 0.0119800063$	$P_value = 0$
mode: $Y = x_8 + x_{10} + x_{11} + x_{14}$;	$R_square = 0.3227381577$	$P_value = 0$
mode: $Y = x_8 + x_{10} + x_{11} + x_{15}$;	$R_square = 0.0184260998$	$P_value = 0$
mode: $Y = x_8 + x_{10} + x_{12} + x_{13}$;	$R_square = 0.0124752794$	$P_value = 0$
mode: $Y = x_8 + x_{10} + x_{12} + x_{14}$;	$R_square = 0.3225126326$	$P_value = 0$
mode: $Y = x_8 + x_{10} + x_{12} + x_{15}$;	$R_square = 0.0182025553$	$P_value = 0$
mode: $Y = x_8 + x_{10} + x_{13} + x_{14}$;	$R_square = 0.3227431827$	$P_value = 0$
mode: $Y = x_8 + x_{10} + x_{13} + x_{15}$;	$R_square = 0.0184442575$	$P_value = 0$
mode: $Y = x_8 + x_{10} + x_{14} + x_{15}$;	$R_square = 0.3220636523$	$P_value = 0$
mode: $Y = x_8 + x_{11} + x_{12} + x_{13}$;	$R_square = 0.0124752794$	$P_value = 0$
mode: $Y = x_8 + x_{11} + x_{12} + x_{14}$;	$R_square = 0.318877864$	$P_value = 0$
mode: $Y = x_8 + x_{11} + x_{12} + x_{15}$;	$R_square = 0.017085466$	$P_value = 0$
mode: $Y = x_8 + x_{11} + x_{13} + x_{14}$;	$R_square = 0.3227431827$	$P_value = 0$
mode: $Y = x_8 + x_{11} + x_{13} + x_{15}$;	$R_square = 0.0184442575$	$P_value = 0$
mode: $Y = x_8 + x_{11} + x_{14} + x_{15}$;	$R_square = 0.3177893399$	$P_value = 0$
mode: $Y = x_8 + x_{12} + x_{13} + x_{14}$;	$R_square = 0.3222833994$	$P_value = 0$
mode: $Y = x_8 + x_{12} + x_{13} + x_{15}$;	$R_square = 0.0178838949$	$P_value = 0$
mode: $Y = x_8 + x_{12} + x_{14} + x_{15}$;	$R_square = 0.3176809926$	$P_value = 0$
mode: $Y = x_8 + x_{13} + x_{14} + x_{15}$;	$R_square = 0.3209616177$	$P_value = 0$
mode: $Y = x_9 + x_{10} + x_{11} + x_{12}$;	$R_square = 0.01245625$	$P_value = 0$
mode: $Y = x_9 + x_{10} + x_{11} + x_{13}$;	$R_square = 0.0119800063$	$P_value = 0$
mode: $Y = x_9 + x_{10} + x_{11} + x_{14}$;	$R_square = 0.3227381577$	$P_value = 0$
mode: $Y = x_9 + x_{10} + x_{12} + x_{13}$;	$R_square = 0.0124752794$	$P_value = 0$
mode: $Y = x_9 + x_{10} + x_{12} + x_{14}$;	$R_square = 0.3225126326$	$P_value = 0$
mode: $Y = x_9 + x_{10} + x_{12} + x_{15}$;	$R_square = 0.0182025553$	$P_value = 0$
mode: $Y = x_9 + x_{10} + x_{13} + x_{14}$;	$R_square = 0.3227431827$	$P_value = 0$
mode: $Y = x_9 + x_{10} + x_{13} + x_{15}$;	$R_square = 0.0184442575$	$P_value = 0$
mode: $Y = x_9 + x_{10} + x_{14} + x_{15}$;	$R_square = 0.3220636523$	$P_value = 0$
mode: $Y = x_9 + x_{11} + x_{12} + x_{13}$;	$R_square = 0.0124752794$	$P_value = 0$
mode: $Y = x_9 + x_{11} + x_{12} + x_{14}$;	$R_square = 0.318877864$	$P_value = 0$
mode: $Y = x_9 + x_{11} + x_{12} + x_{15}$;	$R_square = 0.017085466$	$P_value = 0$
mode: $Y = x_9 + x_{11} + x_{13} + x_{14}$;	$R_square = 0.3227431827$	$P_value = 0$
mode: $Y = x_9 + x_{11} + x_{13} + x_{15}$;	$R_square = 0.0184442575$	$P_value = 0$

mode: $Y = x_9 + x_{11} + x_{14} + x_{15}$; $R_square = 0.3177893399$	$P_value = 0$
mode: $Y = x_9 + x_{12} + x_{13} + x_{14}$; $R_square = 0.3222833994$	$P_value = 0$
mode: $Y = x_9 + x_{12} + x_{13} + x_{15}$; $R_square = 0.0178838949$	$P_value = 0$
mode: $Y = x_9 + x_{12} + x_{14} + x_{15}$; $R_square = 0.3176809926$	$P_value = 0$
mode: $Y = x_9 + x_{13} + x_{14} + x_{15}$; $R_square = 0.3209616177$	$P_value = 0$
mode: $Y = x_{10} + x_{11} + x_{12} + x_{13}$; $R_square = 0.0023853431$	$P_value = 0$
mode: $Y = x_{10} + x_{11} + x_{12} + x_{14}$; $R_square = 0.3053346577$	$P_value = 0$
mode: $Y = x_{10} + x_{11} + x_{12} + x_{15}$; $R_square = 0.0066206179$	$P_value = 0$
mode: $Y = x_{10} + x_{11} + x_{13} + x_{14}$; $R_square = 0.3054054963$	$P_value = 0$
mode: $Y = x_{10} + x_{11} + x_{13} + x_{15}$; $R_square = 0.0060481671$	$P_value = 0$
mode: $Y = x_{10} + x_{11} + x_{14} + x_{15}$; $R_square = 0.3034405315$	$P_value = 0$
mode: $Y = x_{10} + x_{12} + x_{13} + x_{14}$; $R_square = 0.3053403313$	$P_value = 0$
mode: $Y = x_{10} + x_{12} + x_{13} + x_{15}$; $R_square = 0.006639068$	$P_value = 0$
mode: $Y = x_{10} + x_{12} + x_{14} + x_{15}$; $R_square = 0.3032420702$	$P_value = 0$
mode: $Y = x_{10} + x_{13} + x_{14} + x_{15}$; $R_square = 0.3034459434$	$P_value = 0$
mode: $Y = x_{11} + x_{12} + x_{13} + x_{14}$; $R_square = 0.3053403313$	$P_value = 0$
mode: $Y = x_{11} + x_{12} + x_{13} + x_{15}$; $R_square = 0.006639068$	$P_value = 0$
mode: $Y = x_{11} + x_{12} + x_{14} + x_{15}$; $R_square = 0.2995648695$	$P_value = 0$
mode: $Y = x_{11} + x_{13} + x_{14} + x_{15}$; $R_square = 0.3034459434$	$P_value = 0$
mode: $Y = x_{12} + x_{13} + x_{14} + x_{15}$; $R_square = 0.3029885897$	$P_value = 0$