

Physical Fitness Assessment

Part 1: Answer - Body Mass Index

Create the data file below. Use PASW to obtain BMI for each person (hint: use transform -- compute). Interpret BMI for each person.

Height (inches)	Weight (pounds)
54	93
56	111
58	122
60	124
62	130
64	134
66	140
68	146
70	157
72	163
74	179

Determination of body mass index (President's challenge test):

$$BMI_{adult} = \frac{weight(lb)}{Height(inches)^2} (703)$$

Formula inside PASW: weight / (height * height) *(703)

Note: used recode feature to apply info below to construct categories.

BMI: Below 18.5: Underweight

BMI: 18.5 – 24.9: Normal

BMI 25.0 – 29.9: Overweight

BMI 30.0 and Above: Obese

height	weight	BMI	bmigroup
54.00	93.00	22.4	normal weight
56.00	111.00	24.9	normal weight
58.00	122.00	25.5	over weight
60.00	124.00	24.2	normal weight
62.00	130.00	23.8	normal weight
64.00	134.00	23.0	normal weight
66.00	140.00	22.6	normal weight
68.00	146.00	22.2	normal weight
70.00	157.00	22.5	normal weight
72.00	163.00	22.1	normal weight
74.00	179.00	23.0	normal weight

Interpretation: All but one individual is in the 'normal' BMI category.

Part 2: Answer - Lean Body Mass

Create the data file below. Use PASW to obtain body density and percent body fat for each person (hint: use transform -- compute). (gender: 1=male; 2=female)

Gender	Skinfold Thickness in millimeters			
	Thigh	Scapula	Suprailiac	Triceps
1	10	12		
1	14	16		
1	9	12		
1	16	14		
1	10	12		
2			14	10
2			9	8
2			10	12
2			12	14
2			10	8

Used these formulas to get lean body mass

$$\text{men } Y = 1.1043 - .0013(X1) - .0013(X2)$$

where: Y = predicted body density

X1 = thigh skinfold thickness

X2 = scapula skinfold thickness

$$\text{women } Y = 1.0764 - .0008(X1) - .0007(X2)$$

where: Y = predicted body density

X1 = suprailiac skinfold thickness

X2 = triceps skinfold thickness

Used this formula to obtain % Body Fat

$$\%bf = \left[\frac{4.57}{\text{bodydensity}} \right] - 4.142 \cdot (100)$$

Formula in PASW:

$$((4.57/\text{bodydensity}) - 4.142) * 100$$

gender	thigh	scapula	suprailiac	tricep	bd_men	bd_women	bodyfatmen	bodyfatwomen
1.00	10.00	12.00	.	.	1.0757	.	10.64	.
1.00	14.00	16.00	.	.	1.0653	.	14.79	.
1.00	9.00	12.00	.	.	1.0770	.	10.13	.
1.00	16.00	14.00	.	.	1.0653	.	14.79	.
1.00	10.00	12.00	.	.	1.0757	.	10.64	.
2.00	.	.	14.00	10.00	.	1.0582	.	17.67
2.00	.	.	9.00	8.00	.	1.0636	.	15.47
2.00	.	.	10.00	12.00	.	1.0600	.	16.93
2.00	.	.	12.00	14.00	.	1.0570	.	18.16
2.00	.	.	10.00	8.00	.	1.0628	.	15.80