

## ✓ **TalentoTECH**

**Análisis de datos - Integrador**

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**Link Explicación:** <https://www.youtube.com/watch?v=xfWgnfhHz9I>

## **Análisis de datos con regresion lineal y clustering usando KMeans con el Dataset de Obesidad**

### ✓ **1. Planteamiento del problema**

Mi caso de estudio es sobre la obesidad para segmentar los grupos según características como la altura, el peso, hábitos alimenticios, etc., que podrían indicarnos una forma de clasificar su nivel de obesidad y tendrá como objetivos:

- Realizar EDA sobre relaciones según clasificación de edades, género, etc.
- Realizar Regresión Lineal para predicción
- Identificar grupos de pacientes con características similares.
- Realizar clustering usando KMeans

Este dataset se extrae de la página web de kaggle

- <https://www.kaggle.com/datasets/fatemehmehrparvar/obesity-levels/download?datasetVersionNumber=1>

### ✓ **2. Variables del Dataset**

- **Gender:** Genero de las personas
- **Age:** Edad de las personas
- **Height:** Altura de las personas
- **Weight:** Peso de las personas
- **family\_history\_with\_overweight:** Alguna persona de su familia ha tenido o sufrido de sobrepeso
- **FAVC:** Consumes alimentos caloricos frecuentemente
- **FCVC:** Usualmente consumes vegetales en tus comidas
- **NCP:** Cuantas comidas haces en el dia
- **CAEC:** Consumes mas alimentos entre horas
- **SMOKE:** ¿Fumas?
- **CH2O:** Cuantas veces bebes agua en el dia
- **SCC:** Controlas cuantas calorias ingieres en el dia
- **FAF:** Con que frecuencia realizas actividad fisica en el dia
- **TUE:** Cuantas horas gastas usando aparatos electronicos
- **CALC:** Con que frecuencia bebes alcohol
- **MTRANS:** En que te transportas hacia tu destino
- **NObeyesdad:** Nivel de obesidad

## ✓ 2.1 Clasificación de variables:

### Variables numéricas:

- Age
- Height
- Weight
- FCVC
- CH2O
- NCP
- FAF
- TUE

## Variables categóricas:

- Gender
- family\_history\_with\_overweight
- FAVC
- CAEC
- SMOKE
- SCC
- CALC

## 3. Importamos las librerías necesarias para realizar nuestro estudio.

```
import numpy as np
import pandas as pd
import plotly.express as px
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn.preprocessing import StandardScaler
from sklearn.model_selection import train_test_split
from sklearn.decomposition import PCA
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error, mean_absolute_error
from sklearn.preprocessing import MinMaxScaler, LabelEncoder
from sklearn.cluster import KMeans
```

## 4. Importar Datos

Leemos nuestro Dataset que lo hemos descargado de la pagina web de Kaggle

```
df_obesidad=pd.read_csv("/content/ObesityDataSet.csv")
```

Ahora vamos a observar los registros y las columnas de las que disponemos:

```
#Con estos comandos mostramos todos los registros del datframe
```

```
pd.set_option('display.max_columns', None)
```

```
pd.set_option('display.max_rows', None)
```

```
df_obesidad
```

	Gender	Age	Height	Weight	family_history_with_overweight	FAVC
0	Female	21.000000	1.620000	64.000000		yes no 2
1	Female	21.000000	1.520000	56.000000		yes no 3
2	Male	23.000000	1.800000	77.000000		yes no 2
3	Male	27.000000	1.800000	87.000000		no no 3
4	Male	22.000000	1.780000	89.800000		no no 2
5	Male	29.000000	1.620000	53.000000		no yes 2
6	Female	23.000000	1.500000	55.000000		yes yes 3
7	Male	22.000000	1.640000	53.000000		no no 2
8	Male	24.000000	1.780000	64.000000		yes yes 3
9	Male	22.000000	1.720000	68.000000		yes yes 2
10	Male	26.000000	1.850000	105.000000		yes yes 3
11	Female	21.000000	1.720000	80.000000		yes yes 2
12	Male	22.000000	1.650000	56.000000		no no 3
13	Male	41.000000	1.800000	99.000000		no yes 2
14	Male	23.000000	1.770000	60.000000		yes yes 3
15	Female	22.000000	1.700000	66.000000		yes no 3
16	Male	27.000000	1.930000	102.000000		yes yes 2
17	Female	29.000000	1.530000	78.000000		no yes 2
18	Female	30.000000	1.710000	82.000000		yes yes 3
19	Female	23.000000	1.650000	70.000000		yes no 2
20	Male	22.000000	1.650000	80.000000		yes no 2
21	Female	52.000000	1.690000	87.000000		yes yes 3
22	Female	22.000000	1.650000	60.000000		yes yes 3
23	Female	22.000000	1.600000	82.000000		yes yes 1
24	Male	21.000000	1.850000	68.000000		yes yes 2
25	Male	20.000000	1.600000	50.000000		yes no 2

26	Male	21.000000	1.700000	65.000000	yes	yes	2
27	Female	23.000000	1.600000	52.000000	no	yes	2
28	Male	19.000000	1.750000	76.000000	yes	yes	3
29	Male	23.000000	1.680000	70.000000	no	yes	2
30	Male	29.000000	1.770000	83.000000	no	yes	1
31	Female	31.000000	1.580000	68.000000	yes	no	2
32	Female	24.000000	1.770000	76.000000	no	no	2
33	Male	39.000000	1.790000	90.000000	no	no	2
34	Male	22.000000	1.650000	62.000000	no	yes	2
35	Female	21.000000	1.500000	65.000000	yes	no	2
36	Female	22.000000	1.560000	49.000000	no	yes	2
37	Female	21.000000	1.600000	48.000000	no	yes	2
38	Male	23.000000	1.650000	67.000000	yes	yes	2
39	Female	21.000000	1.750000	88.000000	yes	yes	2
40	Female	21.000000	1.670000	75.000000	yes	yes	2
41	Male	23.000000	1.680000	60.000000	no	no	2
42	Female	21.000000	1.660000	64.000000	yes	yes	1
43	Male	21.000000	1.660000	62.000000	yes	yes	2
44	Male	21.000000	1.810000	80.000000	no	no	1
45	Female	21.000000	1.530000	65.000000	yes	no	2
46	Male	21.000000	1.820000	72.000000	yes	yes	1
47	Male	21.000000	1.750000	72.000000	yes	yes	1
48	Female	20.000000	1.660000	60.000000	yes	no	3
49	Female	21.000000	1.550000	50.000000	no	yes	2
50	Female	21.000000	1.610000	54.500000	yes	yes	3
51	Female	20.000000	1.500000	44.000000	no	yes	2
52	Female	23.000000	1.640000	52.000000	no	yes	3
53	Female	23.000000	1.630000	55.000000	yes	no	3
54	Female	22.000000	1.600000	55.000000	no	no	3
55	Male	23.000000	1.680000	62.000000	no	no	2
56	Male	22.000000	1.700000	70.000000	yes	yes	2

						yes	yes	2
56	Male	22.000000	1.700000	70.000000		yes	no	2
57	Male	21.000000	1.640000	65.000000		yes	yes	3
58	Female	17.000000	1.650000	67.000000		yes	yes	2
59	Male	20.000000	1.760000	55.000000		yes	yes	2
60	Female	21.000000	1.550000	49.000000		yes	yes	2
61	Male	20.000000	1.650000	58.000000		no	yes	2
62	Male	22.000000	1.670000	62.000000		no	yes	2
63	Male	22.000000	1.680000	55.000000		yes	yes	2
64	Female	21.000000	1.660000	57.000000		yes	yes	2
65	Female	21.000000	1.620000	69.000000		yes	yes	1
66	Male	23.000000	1.800000	90.000000		yes	yes	1
67	Male	23.000000	1.650000	95.000000		yes	yes	2
68	Male	30.000000	1.760000	112.000000		yes	yes	1
69	Male	23.000000	1.800000	60.000000		yes	no	2
70	Female	23.000000	1.650000	80.000000		yes	yes	2
71	Female	22.000000	1.670000	50.000000		yes	no	3
72	Female	24.000000	1.650000	60.000000		yes	no	2
73	Male	19.000000	1.850000	65.000000		yes	no	2
74	Male	24.000000	1.700000	85.000000		yes	yes	2
75	Female	23.000000	1.630000	45.000000		yes	no	3
76	Female	24.000000	1.600000	45.000000		yes	no	2
77	Female	24.000000	1.700000	80.000000		yes	yes	2
78	Female	23.000000	1.650000	90.000000		yes	yes	2
79	Male	23.000000	1.650000	60.000000		yes	no	2
80	Female	19.000000	1.630000	58.000000		no	no	3
81	Male	30.000000	1.800000	91.000000		yes	yes	2
82	Male	23.000000	1.670000	85.500000		yes	yes	2
83	Female	19.000000	1.600000	45.000000		no	no	3
84	Male	25.000000	1.700000	83.000000		yes	yes	2
85	Male	23.000000	1.650000	58.500000		yes	no	2
86	Male	21.000000	1.850000	83.000000		yes	yes	2

87	Male	19.000000	1.820000	87.000000		yes	yes	2
88	Female	22.000000	1.650000	65.000000		yes	yes	2
89	Female	29.000000	1.700000	78.000000		yes	yes	3
90	Female	25.000000	1.630000	93.000000		no	no	3
91	Female	20.000000	1.610000	64.000000		yes	no	3
92	Male	55.000000	1.780000	84.000000		yes	no	3
93	Female	20.000000	1.600000	57.000000		no	no	3
94	Female	24.000000	1.600000	48.000000		no	yes	3
95	Male	26.000000	1.700000	70.000000		yes	no	3
96	Female	23.000000	1.660000	60.000000		yes	no	2
97	Female	21.000000	1.520000	42.000000		no	no	3
98	Female	21.000000	1.520000	42.000000		no	no	3
99	Male	23.000000	1.720000	70.000000		no	no	2
100	Female	21.000000	1.690000	63.000000		no	yes	3
101	Male	22.000000	1.700000	66.400000		yes	no	2
102	Female	21.000000	1.550000	57.000000		no	yes	2
103	Female	22.000000	1.650000	58.000000		yes	yes	3
104	Female	38.000000	1.560000	80.000000		yes	yes	2
105	Female	25.000000	1.570000	55.000000		no	yes	2
106	Female	25.000000	1.570000	55.000000		no	yes	2
107	Male	22.000000	1.880000	90.000000		yes	yes	2
108	Male	22.000000	1.750000	95.000000		yes	no	2
109	Female	21.000000	1.650000	88.000000		yes	yes	3
110	Male	21.000000	1.750000	75.000000		yes	yes	3
111	Female	22.000000	1.580000	58.000000		yes	yes	2
112	Female	18.000000	1.560000	51.000000		yes	yes	2
113	Female	22.000000	1.500000	49.000000		yes	no	2
114	Female	19.000000	1.610000	62.000000		yes	yes	3
115	Female	17.000000	1.750000	57.000000		yes	yes	3
116	Female	15.000000	1.650000	86.000000		yes	yes	3
117	Female	17.000000	1.700000	85.000000		yes	no	2

118	Male	23.000000	1.620000	53.000000	yes	yes	2
119	Female	19.000000	1.630000	76.000000	yes	no	3
120	Female	23.000000	1.670000	75.000000	yes	yes	2
121	Male	23.000000	1.870000	95.000000	yes	yes	1
122	Male	21.000000	1.750000	50.000000	yes	no	3
123	Male	24.000000	1.660000	67.000000	yes	yes	3
124	Male	23.000000	1.760000	90.000000	no	yes	3
125	Male	18.000000	1.750000	80.000000	yes	yes	2
126	Male	19.000000	1.670000	68.000000	no	yes	2
127	Female	19.000000	1.650000	61.000000	no	yes	3
128	Male	20.000000	1.720000	70.000000	yes	yes	3
129	Male	27.000000	1.700000	78.000000	no	yes	3
130	Female	20.000000	1.580000	53.000000	yes	yes	2
131	Male	23.000000	1.620000	58.000000	no	no	2
132	Female	19.000000	1.650000	56.000000	yes	yes	3
133	Female	61.000000	1.650000	66.000000	no	yes	3
134	Male	30.000000	1.770000	109.000000	yes	yes	3
135	Male	24.000000	1.700000	75.000000	yes	yes	2
136	Male	25.000000	1.790000	72.000000	yes	yes	2
137	Male	44.000000	1.600000	80.000000	yes	no	2
138	Male	31.000000	1.760000	75.000000	yes	no	3
139	Male	25.000000	1.700000	68.000000	no	yes	2
140	Male	23.000000	1.890000	65.000000	yes	yes	3
141	Male	25.000000	1.870000	66.000000	no	yes	3
142	Male	23.000000	1.740000	93.500000	no	yes	2
143	Female	34.000000	1.680000	75.000000	no	yes	3
144	Male	22.000000	1.610000	67.000000	yes	no	2
145	Male	21.000000	1.620000	70.000000	no	yes	2
146	Female	24.000000	1.560000	51.000000	no	no	3
147	Female	36.000000	1.630000	80.000000	yes	no	3

148	Female	27.000000	1.600000	61.000000		no	yes	3
149	Female	32.000000	1.670000	90.000000		yes	yes	3
150	Male	25.000000	1.780000	78.000000		yes	yes	2
151	Female	30.000000	1.620000	59.000000		yes	yes	3
152	Female	38.000000	1.500000	60.000000		yes	yes	2
153	Male	34.000000	1.690000	84.000000		yes	no	2
154	Male	22.000000	1.740000	94.000000		yes	yes	2
155	Female	31.000000	1.680000	63.000000		yes	yes	3
156	Female	35.000000	1.530000	45.000000		yes	no	3
157	Male	21.000000	1.670000	60.000000		yes	yes	2
158	Female	40.000000	1.550000	62.000000		yes	no	3
159	Male	27.000000	1.640000	78.000000		yes	yes	2
160	Male	20.000000	1.830000	72.000000		yes	no	3
161	Male	55.000000	1.650000	80.000000		no	yes	2
162	Female	21.000000	1.630000	60.000000		yes	yes	3
163	Male	25.000000	1.890000	75.000000		no	no	3
164	Male	35.000000	1.770000	85.000000		yes	no	3
165	Male	30.000000	1.920000	130.000000		yes	no	2
166	Female	29.000000	1.740000	72.000000		yes	no	3
167	Male	20.000000	1.650000	80.000000		yes	no	2
168	Female	22.000000	1.730000	79.000000		yes	yes	2
169	Female	45.000000	1.630000	77.000000		yes	yes	2
170	Male	22.000000	1.720000	82.000000		no	yes	2
171	Male	18.000000	1.600000	58.000000		yes	yes	2
172	Female	23.000000	1.650000	59.000000		no	no	3
173	Male	18.000000	1.740000	64.000000		no	no	3
174	Male	21.000000	1.620000	70.000000		no	yes	2
175	Female	38.000000	1.640000	59.800000		yes	yes	2
176	Female	18.000000	1.570000	48.000000		yes	yes	3
177	Male	22.000000	1.840000	84.000000		yes	yes	3
178	Male	26.000000	1.910000	84.000000		yes	yes	3

179	Male	21.000000	1.620000	70.000000	no	yes	2
180	Female	18.000000	1.580000	48.000000	no	yes	2
181	Female	23.000000	1.680000	67.000000	yes	yes	2
182	Female	22.000000	1.680000	52.000000	no	yes	3
183	Female	23.000000	1.480000	60.000000	yes	yes	2
184	Male	21.000000	1.620000	70.000000	no	yes	2
185	Female	31.000000	1.620000	68.000000	no	no	3
186	Male	39.000000	1.780000	96.000000	yes	no	2
187	Male	25.000000	1.780000	98.000000	yes	no	2
188	Male	35.000000	1.780000	105.000000	yes	yes	3
189	Female	33.000000	1.630000	62.000000	yes	yes	2
190	Male	20.000000	1.600000	56.000000	no	yes	2
191	Male	26.000000	1.750000	80.000000	yes	yes	3
192	Male	20.000000	1.830000	85.000000	yes	no	3
193	Male	20.000000	1.780000	68.000000	no	no	2
194	Female	23.000000	1.600000	83.000000	yes	yes	3
195	Male	19.000000	1.800000	85.000000	yes	yes	3
196	Male	22.000000	1.750000	74.000000	yes	no	2
197	Male	41.000000	1.750000	118.000000	yes	yes	2
198	Female	18.000000	1.590000	40.000000	yes	yes	2
199	Female	23.000000	1.660000	60.000000	yes	yes	2
200	Female	23.000000	1.630000	83.000000	yes	no	3
201	Female	41.000000	1.540000	80.000000	yes	yes	2
202	Female	26.000000	1.560000	102.000000	yes	yes	3
203	Male	29.000000	1.690000	90.000000	yes	no	2
204	Male	27.000000	1.830000	71.000000	yes	yes	2
205	Female	23.000000	1.600000	78.000000	yes	yes	2
206	Male	19.000000	1.750000	100.000000	yes	yes	2
207	Male	30.000000	1.750000	73.000000	yes	no	2
208	Female	22.000000	1.690000	65.000000	yes	yes	2
209	Female	22.000000	1.690000	65.000000	yes	yes	2

	Gender	22.000000	1.000000	50.000000		yes	yes	2
210	Male	20.000000	1.800000	114.000000		yes	yes	2
211	Female	21.000000	1.630000	51.000000		no	yes	2
212	Female	24.000000	1.500000	63.000000		yes	no	2
213	Male	21.000000	1.800000	62.000000		yes	yes	3
214	Male	21.000000	1.650000	53.000000		yes	yes	2
215	Male	21.000000	1.680000	70.000000		yes	yes	3
216	Female	23.000000	1.600000	63.000000		yes	no	3
217	Male	21.000000	1.710000	75.000000		no	no	2
218	Female	21.000000	1.500000	42.300000		yes	no	1
219	Female	21.000000	1.600000	68.000000		yes	yes	2
220	Female	21.000000	1.750000	78.000000		yes	no	2
221	Male	23.000000	1.720000	82.000000		yes	yes	2
222	Female	21.000000	1.720000	66.500000		yes	yes	3
223	Female	22.000000	1.610000	63.000000		yes	yes	3
224	Female	23.000000	1.630000	82.000000		yes	yes	2
225	Male	25.000000	1.830000	121.000000		yes	no	3
226	Female	20.000000	1.600000	50.000000		no	yes	2
227	Female	24.000000	1.620000	58.000000		no	yes	3
228	Female	40.000000	1.680000	80.000000		no	no	3
229	Male	32.000000	1.750000	120.000000		yes	no	3
230	Male	20.000000	1.900000	91.000000		yes	yes	3
231	Female	21.000000	1.630000	66.000000		yes	yes	3
232	Female	51.000000	1.590000	50.000000		yes	no	3
233	Female	34.000000	1.680000	77.000000		yes	no	3
234	Female	19.000000	1.590000	49.000000		yes	yes	2
235	Female	19.000000	1.690000	70.000000		yes	no	2
236	Female	21.000000	1.660000	59.000000		no	yes	1
237	Female	19.000000	1.640000	53.000000		yes	yes	3
238	Female	20.000000	1.620000	53.000000		no	yes	3
239	Female	19.000000	1.700000	64.000000		yes	yes	3

240	Female	17.000000	1.630000	65.000000		no	yes	2
241	Male	22.000000	1.600000	66.000000		no	yes	3
242	Female	20.000000	1.630000	64.000000		yes	yes	1
243	Male	33.000000	1.850000	99.000000		yes	yes	2
244	Female	21.000000	1.540000	49.000000		yes	no	2
245	Female	20.000000	1.640000	49.000000		no	no	3
246	Female	20.000000	1.570000	60.000000		no	yes	3
247	Female	20.000000	1.620000	52.000000		no	yes	3
248	Male	21.000000	1.720000	72.000000		yes	yes	3
249	Male	21.000000	1.760000	78.000000		yes	yes	3
250	Female	20.000000	1.650000	75.000000		yes	yes	3
251	Male	20.000000	1.670000	78.000000		yes	no	2
252	Male	56.000000	1.790000	90.000000		yes	no	2
253	Female	26.000000	1.590000	47.000000		yes	yes	2
254	Female	22.000000	1.640000	56.000000		yes	no	3
255	Male	19.000000	1.780000	81.000000		yes	no	1
256	Male	18.000000	1.750000	85.000000		yes	no	2
257	Male	19.000000	1.850000	115.000000		no	no	2
258	Male	18.000000	1.700000	80.000000		no	no	3
259	Female	18.000000	1.670000	91.000000		yes	yes	1
260	Male	21.000000	1.720000	75.000000		no	yes	2
261	Female	28.000000	1.700000	73.000000		yes	no	2
262	Male	18.000000	1.740000	70.000000		no	yes	2
263	Male	23.000000	1.740000	53.000000		no	yes	2
264	Male	18.000000	1.870000	67.000000		yes	yes	3
265	Male	18.000000	1.700000	50.000000		no	yes	1
266	Female	39.000000	1.650000	50.000000		no	yes	3
267	Male	38.000000	1.700000	78.000000		no	yes	3
268	Male	17.000000	1.670000	60.000000		no	no	2
269	Male	23.000000	1.720000	66.000000		yes	yes	2
270	Male	23.000000	1.820000	107.000000		no	yes	2

271	Female	19.000000	1.500000	50.000000		no	yes	2
272	Male	18.000000	1.700000	60.000000		no	yes	2
273	Male	25.000000	1.710000	71.000000		yes	yes	2
274	Female	25.000000	1.610000	61.000000		no	no	2
275	Female	18.000000	1.500000	50.000000		yes	yes	3
276	Male	16.000000	1.670000	50.000000		yes	yes	2
277	Male	21.000000	1.820000	67.000000		no	yes	2
278	Female	32.000000	1.570000	57.000000		yes	yes	3
279	Male	18.000000	1.790000	52.000000		no	no	3
280	Male	21.000000	1.750000	62.000000		no	yes	3
281	Male	18.000000	1.700000	55.000000		yes	yes	2
282	Female	18.000000	1.620000	55.000000		yes	yes	2
283	Male	17.000000	1.690000	60.000000		no	no	2
284	Male	20.000000	1.770000	70.000000		yes	yes	1
285	Male	21.000000	1.790000	105.000000		yes	yes	2
286	Female	21.000000	1.600000	61.000000		no	yes	2
287	Female	18.000000	1.600000	58.000000		yes	yes	2
288	Female	17.000000	1.560000	51.000000		no	yes	3
289	Male	19.000000	1.880000	79.000000		no	no	2
290	Male	16.000000	1.820000	71.000000		yes	yes	2
291	Male	17.000000	1.800000	58.000000		no	yes	2
292	Male	21.000000	1.700000	65.000000		yes	yes	2
293	Male	19.000000	1.820000	75.000000		yes	no	2
294	Male	18.000000	1.860000	110.000000		yes	yes	2
295	Female	16.000000	1.660000	58.000000		no	no	2
296	Female	21.000000	1.530000	53.000000		no	yes	3
297	Male	26.000000	1.740000	80.000000		no	no	2
298	Male	18.000000	1.800000	80.000000		yes	yes	2
299	Male	23.000000	1.700000	75.000000		no	yes	3
300	Male	26.000000	1.700000	70.000000		no	yes	2

301	Male	18.000000	1.720000	55.000000		no	yes	2
302	Male	16.000000	1.840000	45.000000		yes	yes	3
303	Female	16.000000	1.570000	49.000000		no	yes	2
304	Male	20.000000	1.800000	85.000000		yes	no	2
305	Male	23.000000	1.750000	120.000000		yes	yes	2
306	Female	24.000000	1.560000	60.000000		yes	yes	1
307	Female	23.000000	1.590000	48.000000		yes	yes	2
308	Male	20.000000	1.800000	75.000000		no	yes	3
309	Female	16.000000	1.660000	58.000000		no	no	2
310	Male	17.000000	1.790000	57.000000		yes	yes	2
311	Male	17.000000	1.720000	62.000000		no	yes	2
312	Female	16.000000	1.600000	57.000000		no	yes	3
313	Male	17.000000	1.660000	56.000000		yes	yes	1
314	Female	26.000000	1.650000	63.000000		no	yes	3
315	Male	26.000000	1.700000	72.000000		no	yes	2
316	Male	38.000000	1.750000	75.000000		yes	no	3
317	Male	18.000000	1.750000	70.000000		no	yes	3
318	Female	25.000000	1.560000	45.000000		no	yes	2
319	Female	27.000000	1.550000	63.000000		no	yes	2
320	Male	21.000000	1.670000	67.000000		yes	yes	3
321	Male	38.000000	1.750000	75.000000		yes	no	3
322	Female	23.000000	1.750000	56.000000		no	no	3
323	Male	18.000000	1.800000	72.000000		yes	yes	2
324	Female	30.000000	1.650000	71.000000		yes	yes	2
325	Female	21.000000	1.550000	58.000000		no	yes	2
326	Male	18.000000	1.700000	55.300000		yes	yes	3
327	Male	23.000000	1.720000	76.000000		yes	no	3
328	Male	19.000000	1.740000	74.000000		yes	no	3
329	Female	19.000000	1.650000	82.000000		yes	yes	3
330	Female	17.000000	1.800000	50.000000		no	yes	3
331	Male	17.000000	1.740000	56.000000		yes	yes	2

332	Male	27.000000	1.850000	75.000000	yes	yes	2
333	Female	23.000000	1.700000	56.000000	no	no	3
334	Female	18.000000	1.450000	53.000000	no	yes	2
335	Male	19.000000	1.700000	50.000000	no	yes	1
336	Male	20.000000	1.700000	65.000000	no	yes	2
337	Male	18.000000	1.780000	64.400000	yes	yes	3
338	Female	17.000000	1.600000	65.000000	no	yes	3
339	Female	19.000000	1.530000	42.000000	no	no	2
340	Male	21.000000	1.800000	72.000000	no	yes	3
341	Male	20.000000	1.600000	50.000000	no	no	2
342	Male	23.000000	1.740000	105.000000	yes	yes	3
343	Male	23.000000	1.650000	66.000000	no	no	3
344	Male	18.000000	1.870000	173.000000	yes	yes	3
345	Male	17.000000	1.700000	55.000000	no	yes	3
346	Female	21.000000	1.540000	47.000000	yes	no	3
347	Male	17.000000	1.800000	97.000000	yes	yes	2
348	Male	18.000000	1.820000	80.000000	yes	yes	2
349	Male	20.000000	1.980000	125.000000	yes	yes	2
350	Male	17.000000	1.750000	70.000000	yes	no	2
351	Female	26.000000	1.650000	60.000000	no	no	3
352	Female	17.000000	1.600000	53.000000	no	yes	1
353	Female	24.000000	1.600000	51.000000	yes	yes	1
354	Female	17.000000	1.600000	59.000000	no	yes	2
355	Female	27.000000	1.550000	62.000000	no	yes	3
356	Male	17.000000	1.900000	60.000000	no	no	3
357	Female	17.000000	1.700000	56.000000	yes	yes	1
358	Male	41.000000	1.750000	110.000000	yes	no	2
359	Female	33.000000	1.560000	48.000000	yes	no	2
360	Male	20.000000	1.870000	75.000000	no	yes	2
361	Female	40.000000	1.560000	80.000000	yes	yes	2
362	Female	37.000000	1.650000	73.000000	yes	no	3

363	Male	19.000000	1.800000	80.000000			no	yes 2
364	Male	24.000000	1.840000	86.000000			yes	yes 2
365	Male	24.000000	1.700000	68.000000			no	yes 3
366	Male	33.000000	1.720000	83.000000			yes	yes 2
367	Female	40.000000	1.580000	63.000000			no	yes 2
368	Female	37.000000	1.680000	83.000000			yes	yes 2
369	Male	20.000000	1.580000	74.000000			no	no 3
370	Male	19.000000	1.800000	60.000000			no	yes 2
371	Male	17.000000	1.620000	69.000000			yes	yes 3
372	Female	18.000000	1.620000	58.000000			no	yes 3
373	Female	21.000000	1.540000	56.000000			no	yes 2
374	Male	18.000000	1.760000	70.000000			yes	yes 2
375	Male	41.000000	1.800000	92.000000			yes	yes 2
376	Female	36.000000	1.580000	60.000000			yes	no 3
377	Male	18.000000	1.760000	68.000000			no	no 2
378	Male	18.000000	1.730000	70.000000			no	yes 3
379	Male	17.000000	1.700000	70.000000			yes	yes 3
380	Male	25.000000	1.700000	83.000000			no	yes 3
381	Male	21.000000	1.800000	75.000000			yes	yes 3
382	Female	29.000000	1.600000	56.000000			yes	no 2
383	Male	17.000000	1.700000	98.000000			yes	no 2
384	Female	18.000000	1.600000	60.000000			yes	yes 3
385	Female	16.000000	1.550000	45.000000			no	yes 2
386	Female	18.000000	1.590000	53.000000			no	no 1
387	Female	37.000000	1.500000	75.000000			yes	yes 2
388	Male	18.000000	1.780000	108.000000			yes	no 2
389	Female	16.000000	1.610000	65.000000			yes	yes 1
390	Male	23.000000	1.710000	50.000000			yes	yes 2
391	Female	18.000000	1.700000	50.000000			no	no 2
392	Male	18.000000	1.760000	69.500000			no	no 3

393	Male	18.000000	1.700000	78.000000		no	yes	1
394	Female	17.000000	1.530000	55.000000		yes	yes	2
395	Female	20.000000	1.540000	39.000000		yes	yes	1
396	Female	38.000000	1.550000	59.000000		yes	no	3
397	Male	20.000000	1.660000	60.000000		no	yes	2
398	Male	21.000000	1.850000	125.000000		yes	yes	3
399	Male	21.000000	1.650000	60.000000		no	no	3
400	Male	18.000000	1.650000	70.000000		yes	no	2
401	Male	26.000000	1.830000	82.000000		no	yes	2
402	Male	27.000000	1.830000	99.000000		yes	yes	3
403	Female	26.000000	1.660000	112.000000		yes	no	3
404	Male	34.000000	1.780000	73.000000		no	yes	2
405	Male	18.000000	1.740000	86.000000		no	no	3
406	Male	33.000000	1.760000	66.500000		no	no	2
407	Female	19.000000	1.510000	59.000000		yes	yes	3
408	Male	20.000000	1.810000	79.000000		yes	no	3
409	Female	33.000000	1.550000	55.000000		yes	yes	3
410	Male	20.000000	1.830000	66.000000		no	no	2
411	Female	20.000000	1.600000	65.000000		no	no	3
412	Male	33.000000	1.850000	85.000000		no	yes	2
413	Male	33.000000	1.750000	85.000000		no	no	2
414	Male	33.000000	1.830000	113.000000		yes	yes	2
415	Male	14.000000	1.710000	72.000000		yes	yes	3
416	Male	34.000000	1.840000	88.000000		no	yes	3
417	Male	18.000000	1.770000	87.000000		yes	yes	3
418	Male	18.000000	1.700000	90.000000		no	yes	3
419	Male	29.000000	1.620000	89.000000		yes	yes	1
420	Male	18.000000	1.850000	60.000000		yes	yes	3
421	Male	18.000000	1.840000	60.000000		yes	yes	3
422	Male	19.000000	1.750000	58.000000		no	yes	2
423	Male	33.000000	1.850000	93.000000		yes	yes	2

424	Male	33.000000	1.740000	76.000000		no	no	2
425	Female	19.000000	1.610000	53.800000		yes	yes	2
426	Male	22.000000	1.750000	70.000000		no	no	2
427	Female	20.000000	1.670000	60.000000		no	yes	3
428	Male	23.000000	1.700000	69.000000		no	yes	3
429	Male	26.000000	1.900000	80.000000		yes	yes	2
430	Male	18.000000	1.650000	85.000000		no	yes	2
431	Female	18.000000	1.600000	55.000000		no	yes	2
432	Male	19.000000	1.800000	70.000000		no	yes	3
433	Female	18.000000	1.640000	59.000000		yes	yes	2
434	Male	19.000000	1.890000	87.000000		no	yes	2
435	Female	19.000000	1.760000	80.000000		yes	yes	2
436	Female	18.000000	1.560000	55.000000		no	yes	2
437	Female	18.000000	1.600000	56.000000		yes	yes	2
438	Female	19.000000	1.670000	64.000000		no	yes	3
439	Female	19.000000	1.600000	60.000000		no	yes	2
440	Female	18.000000	1.550000	56.000000		no	yes	2
441	Female	18.000000	1.550000	50.000000		yes	yes	3
442	Male	26.000000	1.720000	65.000000		yes	yes	2
443	Male	18.000000	1.720000	53.000000		yes	yes	2
444	Male	19.000000	1.700000	60.000000		yes	yes	2
445	Female	19.000000	1.510000	45.000000		no	yes	2
446	Male	19.000000	1.830000	82.000000		yes	yes	3
447	Male	19.000000	1.800000	87.000000		yes	yes	2
448	Female	24.000000	1.600000	100.500000		yes	yes	3
449	Female	18.000000	1.630000	63.000000		yes	yes	1
450	Male	19.000000	1.710000	71.000000		no	yes	3
451	Male	19.000000	1.700000	65.000000		yes	no	2
452	Male	23.000000	1.750000	69.000000		no	no	3
453	Female	18.000000	1.620000	50.000000		no	yes	3
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454	Female	20.000000	1.680000	68.000000		no	yes	3
455	Male	18.000000	1.850000	66.000000		no	yes	2
456	Female	33.000000	1.590000	60.000000		no	yes	3
457	Female	19.000000	1.500000	45.000000		no	yes	2
458	Male	19.000000	1.690000	60.000000		no	yes	2
459	Male	19.000000	1.760000	79.000000		yes	yes	2
460	Female	18.000000	1.620000	55.000000		yes	yes	2
461	Male	21.000000	1.710000	100.000000		yes	yes	2
462	Male	27.000000	1.720000	88.000000		yes	yes	2
463	Male	17.000000	1.800000	68.000000		yes	no	2
464	Male	18.000000	1.930000	86.000000		no	no	3
465	Female	18.000000	1.600000	51.000000		yes	yes	2
466	Male	22.000000	1.740000	75.000000		yes	yes	3
467	Male	22.000000	1.740000	75.000000		yes	yes	3
468	Female	20.000000	1.620000	45.000000		no	yes	3
469	Female	19.000000	1.540000	42.000000		no	yes	3
470	Female	20.000000	1.560000	51.500000		no	yes	2
471	Female	18.000000	1.600000	83.000000		yes	yes	2
472	Female	18.000000	1.540000	71.000000		no	no	3
473	Female	18.000000	1.630000	51.000000		yes	yes	1
474	Male	19.000000	1.780000	64.000000		no	yes	2
475	Female	18.000000	1.620000	68.000000		no	no	2
476	Female	18.000000	1.710000	75.000000		yes	yes	3
477	Female	18.000000	1.640000	56.000000		yes	yes	3
478	Male	19.000000	1.690000	65.000000		no	yes	2
479	Female	17.000000	1.580000	50.000000		no	yes	1
480	Female	18.000000	1.570000	50.000000		no	yes	2
481	Male	18.000000	1.740000	64.000000		yes	yes	3
482	Female	20.000000	1.580000	53.500000		yes	yes	2
483	Female	18.000000	1.500000	58.000000		no	yes	2
484	Female	36.000000	1.650000	80.000000		yes	yes	2

485	Male	21.000000	1.800000	73.000000	yes	yes	1
486	Male	23.000000	1.750000	75.000000	no	yes	2
487	Male	20.000000	1.840000	104.000000	yes	no	2
488	Male	21.000000	1.880000	84.000000	yes	yes	3
489	Female	19.000000	1.560000	50.000000	no	yes	2
490	Male	24.000000	1.750000	84.000000	no	yes	3
491	Male	25.000000	1.660000	68.000000	no	yes	2
492	Male	45.000000	1.700000	86.000000	no	yes	3
493	Male	20.000000	1.800000	65.000000	no	yes	2
494	Female	18.000000	1.670000	66.000000	no	yes	3
495	Male	19.000000	1.800000	60.000000	yes	yes	3
496	Male	18.000000	1.720000	53.000000	yes	yes	2
497	Male	20.000000	1.560000	45.000000	no	no	2
498	Female	25.196214	1.686306	104.572712	yes	yes	3
499	Female	18.503343	1.683124	126.673780	yes	yes	3
500	Female	26.000000	1.622397	110.792630	yes	yes	3
501	Female	21.853826	1.755643	137.796884	yes	yes	3
502	Female	21.900120	1.843419	165.057269	yes	yes	3
503	Female	18.306615	1.745600	133.034410	yes	yes	3
504	Female	26.000000	1.630927	111.485516	yes	yes	3
505	Female	26.000000	1.629191	104.826776	yes	yes	3
506	Female	21.849705	1.770612	133.963349	yes	yes	3
507	Male	19.799054	1.743702	54.927529	yes	yes	2
508	Male	17.188754	1.771915	55.695036	yes	yes	2
509	Male	22.285024	1.753760	55.879263	yes	yes	2
510	Female	22.000000	1.675446	51.154201	yes	yes	3
511	Female	21.024970	1.666203	49.869791	yes	yes	3
512	Female	22.038327	1.711467	51.965521	yes	yes	2
513	Female	21.243142	1.598019	44.845655	no	no	3
514	Female	22.142432	1.596110	42.848033	no	no	3
515	Female	21.962426	1.572060	43.919835	no	no	3

516	Female	21.491055	1.586952	43.087508		no	no	2
517	Female	22.717943	1.595590	44.581159		no	no	2
518	Female	23.501249	1.600000	45.000000		no	no	2
519	Female	18.535075	1.688025	45.000000		no	yes	3
520	Female	19.000000	1.556211	42.339767		no	yes	3
521	Female	19.000000	1.564199	42.096062		no	yes	3
522	Female	20.254534	1.569480	41.324558		no	yes	2
523	Female	21.000000	1.520000	42.000000		no	yes	3
524	Female	20.225396	1.550648	44.641796		no	yes	3
525	Female	19.869970	1.520997	42.000000		no	yes	3
526	Female	20.147114	1.528011	42.000000		no	yes	3
527	Female	21.000000	1.520000	42.000000		no	yes	3
528	Female	21.996523	1.733263	50.890363		no	no	3
529	Female	21.376426	1.722527	50.833029		no	no	3
530	Female	19.724106	1.734832	50.000000		no	no	1
531	Male	23.000000	1.882779	64.106108		yes	yes	3
532	Male	22.851834	1.854592	63.611109		yes	yes	3
533	Male	23.000000	1.835643	58.854416		yes	yes	3
534	Male	18.216032	1.755507	52.000000		yes	yes	3
535	Male	21.811190	1.712660	51.598593		yes	yes	3
536	Male	18.164768	1.694265	52.000000		yes	yes	3
537	Female	18.871794	1.586895	41.452385		no	yes	2
538	Female	18.766033	1.579561	41.890204		no	yes	2
539	Female	18.540535	1.564568	41.397378		no	yes	2
540	Female	19.880360	1.670635	49.742931		no	no	2
541	Female	19.717249	1.688426	49.660995		no	no	2
542	Female	19.633898	1.660840	49.039794		no	no	2
543	Female	23.000000	1.710182	50.287967		yes	yes	2
544	Female	20.406871	1.755978	53.699561		yes	yes	2
545	Female	23.000000	1.728834	51.442293		yes	yes	2

546	Female	19.058511	1.662017	49.838965		no	yes	1
547	Female	18.827008	1.700000	50.000000		no	yes	1
548	Female	19.314964	1.661403	49.932199		no	yes	2
549	Female	29.970445	1.610863	49.516027		yes	yes	2
550	Female	32.383858	1.640688	46.655622		yes	yes	3
551	Female	24.163526	1.646030	49.839685		yes	yes	3
552	Male	17.038222	1.710564	51.588874		no	yes	2
553	Male	16.306870	1.752755	50.000000		no	yes	2
554	Male	16.198153	1.691007	52.629374		no	yes	2
555	Male	18.000000	1.753349	51.457226		no	yes	2
556	Male	18.000000	1.781543	50.869704		no	yes	2
557	Male	18.000000	1.755823	52.331172		no	yes	2
558	Male	17.486869	1.836669	58.943347		yes	yes	2
559	Male	19.920629	1.768493	57.790381		yes	yes	2
560	Male	18.426619	1.777108	57.145917		yes	yes	2
561	Female	17.082867	1.640824	43.365005		no	yes	2
562	Female	17.000433	1.584951	44.411801		no	yes	2
563	Female	16.270434	1.818268	47.124717		no	yes	3
564	Male	17.908114	1.793926	59.682591		yes	yes	2
565	Male	17.120699	1.809251	58.968994		yes	yes	2
566	Male	19.329542	1.767335	55.700497		yes	yes	2
567	Female	22.377998	1.699568	54.987740		yes	yes	3
568	Female	20.954955	1.759358	55.010450		yes	yes	2
569	Female	22.991668	1.740295	54.166453		yes	yes	3
570	Female	19.300435	1.739354	49.649613		no	yes	3
571	Female	17.065445	1.647811	49.603807		no	yes	3
572	Female	19.084967	1.768435	49.597765		no	yes	3
573	Female	18.024853	1.700000	50.000000		no	yes	1
574	Female	19.833682	1.699464	49.676046		no	yes	1
575	Female	17.767432	1.743790	50.000000		no	yes	1
576	Female	19.504696	1.590317	42.367615		no	no	2

577	Female	19.950605	1.527133	42.000000	no	no	2
578	Female	19.000000	1.530875	42.000000	no	no	2
579	Male	17.000000	1.848294	59.409018	yes	yes	2
580	Male	17.000000	1.824414	59.295172	yes	yes	2
581	Male	18.525525	1.856633	59.258372	yes	yes	2
582	Female	22.926352	1.715597	50.000000	yes	yes	2
583	Female	21.785351	1.675054	49.945233	yes	yes	2
584	Female	23.000000	1.717601	51.073918	yes	yes	2
585	Female	17.402028	1.710756	50.000000	no	yes	2
586	Female	18.000000	1.700000	50.000000	no	yes	1
587	Female	18.482070	1.700000	50.000000	no	yes	1
588	Female	18.530840	1.573816	39.850137	no	yes	1
589	Female	19.948140	1.530884	39.371523	no	yes	1
590	Female	20.400053	1.529724	40.343463	no	yes	2
591	Male	19.556729	1.767563	56.307019	yes	yes	2
592	Male	17.703680	1.883364	60.000000	yes	yes	3
593	Male	18.274358	1.824655	58.621349	yes	yes	2
594	Male	18.000000	1.840138	60.000000	yes	yes	3
595	Male	17.210933	1.819557	58.325122	yes	yes	2
596	Male	17.469417	1.798645	59.612717	yes	yes	2
597	Male	18.000000	1.710800	50.925380	yes	yes	2
598	Male	18.000000	1.706530	51.121749	yes	yes	2
599	Male	18.000000	1.716691	51.149283	yes	yes	1
600	Female	19.010211	1.555431	44.188767	no	no	2
601	Female	19.091346	1.603923	45.000000	no	no	3
602	Female	19.773303	1.602082	45.000000	no	no	3
603	Female	19.483036	1.537770	42.000000	no	yes	3
604	Female	19.000000	1.538398	42.000000	no	yes	2
605	Female	19.407204	1.520862	42.000000	no	yes	3
606	Male	18.000000	1.717826	51.732500	yes	yes	1
607	..	19.101011	1.750000	51.101005	..	..	..

607	Male	18.424941	1.753389	54.121925		yes	yes	2
608	Male	18.000000	1.701650	50.157707		yes	yes	1
609	Male	19.979810	1.753360	54.997374		yes	yes	2
610	Female	21.798856	1.672007	49.980968		yes	yes	2
611	Female	22.209706	1.593847	44.050251		no	no	3
612	Female	23.018443	1.584785	44.376637		no	no	2
613	Female	19.376997	1.600264	45.000000		no	no	3
614	Female	20.971429	1.549311	41.557468		no	yes	2
615	Female	20.345161	1.534385	41.965250		no	yes	2
616	Female	20.519916	1.725548	49.815599		yes	no	2
617	Male	20.406066	1.868931	63.199726		yes	yes	3
618	Female	21.478496	1.686936	51.256059		yes	yes	3
619	Female	18.372563	1.589829	40.202773		no	yes	2
620	Female	19.931667	1.653209	49.026214		no	no	2
621	Female	22.998709	1.740108	53.657270		yes	yes	2
622	Female	18.006742	1.700000	50.000000		no	yes	1
623	Female	34.799519	1.689141	50.000000		yes	yes	2
624	Male	16.496978	1.691206	50.000000		no	yes	2
625	Male	18.000000	1.788459	51.552595		no	yes	2
626	Male	17.377131	1.811238	58.830710		yes	yes	2
627	Female	16.611837	1.830068	43.534531		no	yes	2
628	Male	17.080493	1.782756	56.029418		yes	yes	2
629	Female	22.970655	1.751691	55.967655		yes	yes	2
630	Female	17.764764	1.786560	50.000000		no	yes	2
631	Female	19.272573	1.713670	50.000000		no	yes	1
632	Female	19.000000	1.540375	42.006282		no	no	2
633	Male	17.067130	1.896734	59.895052		yes	yes	2
634	Female	23.000000	1.710129	50.079991		yes	yes	2
635	Female	18.000000	1.704193	50.631889		no	yes	2
636	Female	19.054008	1.556611	39.695295		no	yes	1
637	Male	18.000000	1.845399	60.000000		yes	yes	3

638	Male	17.491272	1.834637	59.990861	yes	yes	2
639	Male	18.000000	1.721854	52.514302	yes	yes	2
640	Female	20.172661	1.605521	44.661461	no	no	3
641	Female	19.220108	1.530266	42.000000	no	yes	3
642	Male	18.000000	1.718890	52.058335	yes	yes	1
643	Male	19.962470	1.756338	54.982340	yes	yes	2
644	Male	17.580627	1.770324	55.695253	yes	yes	2
645	Female	21.125098	1.767479	56.265959	yes	yes	2
646	Female	22.033129	1.704223	51.437985	yes	yes	2
647	Female	20.744839	1.667852	49.803921	yes	yes	2
648	Female	22.547298	1.722461	51.881263	yes	yes	2
649	Female	21.837996	1.588046	44.236067	no	no	3
650	Female	23.035829	1.598612	42.993937	no	no	2
651	Female	21.529439	1.592379	44.009450	no	no	3
652	Female	21.287999	1.555778	42.360100	no	no	2
653	Female	23.444286	1.596466	44.594588	no	no	2
654	Female	22.329041	1.598393	44.918255	no	no	2
655	Female	18.915050	1.633316	45.000000	no	yes	3
656	Female	19.000000	1.559567	42.126170	no	yes	3
657	Female	19.052833	1.546551	42.069992	no	yes	3
658	Female	19.599040	1.566501	41.706283	no	yes	2
659	Female	21.000000	1.520000	42.000000	no	yes	3
660	Female	19.673262	1.599486	44.810751	no	no	3
661	Female	20.244359	1.559186	41.952805	no	yes	2
662	Female	20.552695	1.523426	42.000000	no	yes	3
663	Female	21.000000	1.520000	42.000000	no	yes	3
664	Female	21.997683	1.689441	51.107925	yes	yes	3
665	Female	21.274628	1.737453	50.479039	yes	yes	3
666	Female	18.909439	1.732096	50.000000	no	yes	1
667	Male	22.396504	1.869098	61.411141	yes	yes	3
668	Male	19.084317	1.851123	61.264785	yes	yes	3

669	Male	21.084625	1.787264	58.585146		yes	yes	2
670	Male	18.068767	1.787787	52.000000		yes	yes	3
671	Female	21.813083	1.712515	51.710723		yes	yes	2
672	Male	18.038422	1.698914	51.692272		yes	yes	2
673	Female	18.874591	1.533609	41.669346		no	yes	2
674	Female	19.211640	1.567981	41.934368		no	yes	2
675	Female	18.988581	1.544263	41.535047		no	yes	2
676	Female	19.408999	1.670552	49.804245		no	yes	2
677	Female	19.665881	1.676346	49.105025		no	no	2
678	Female	19.758286	1.667404	49.125955		no	no	2
679	Female	22.422674	1.700110	50.173425		yes	yes	2
680	Male	20.242237	1.756330	54.567343		yes	yes	2
681	Female	22.637018	1.703584	51.607091		yes	yes	2
682	Female	19.007177	1.690727	49.895716		no	yes	1
683	Female	18.288205	1.713564	50.000000		no	yes	1
684	Female	19.314429	1.672310	49.713944		no	yes	2
685	Female	27.148230	1.660446	49.558304		yes	yes	2
686	Female	25.380557	1.630379	46.062954		yes	yes	2
687	Female	22.867719	1.655413	50.424661		yes	yes	3
688	Male	17.729923	1.732862	51.216463		no	yes	2
689	Female	16.834813	1.744020	50.000000		no	yes	2
690	Male	17.521754	1.757958	52.094320		no	yes	2
691	Male	18.000000	1.786758	51.524444		no	yes	2
692	Male	18.000000	1.767058	51.132809		yes	yes	2
693	Male	18.128249	1.699437	52.086570		yes	yes	2
694	Male	17.405104	1.825250	58.913579		yes	yes	2
695	Male	19.729250	1.793315	58.195150		yes	yes	2
696	Male	18.525834	1.776989	57.275946		yes	yes	2
697	Female	18.595614	1.609495	42.656563		no	yes	2
698	Female	16.613108	1.777929	44.762023		no	yes	2

699	Female	16.928791	1.710948	45.248627		no	yes	2
700	Male	17.758315	1.854162	59.881316		yes	yes	2
701	Male	17.282945	1.821514	59.605028		yes	yes	2
702	Male	19.993154	1.762073	55.511075		yes	yes	2
703	Female	22.935612	1.732307	54.835576		yes	yes	3
704	Male	20.738469	1.759933	55.003417		yes	yes	2
705	Female	22.993680	1.741377	54.877111		yes	yes	3
706	Female	19.317148	1.731195	49.650897		no	yes	2
707	Female	16.910997	1.748230	49.928447		no	yes	2
708	Female	19.071027	1.756865	49.699672		no	yes	1
709	Female	18.019572	1.701378	50.088468		no	yes	1
710	Female	19.735968	1.699956	49.982970		no	yes	1
711	Female	18.094079	1.723328	50.000000		no	yes	1
712	Female	19.054938	1.585886	42.541794		no	no	2
713	Female	20.850119	1.524926	42.000000		no	yes	2
714	Female	19.349258	1.523370	42.000000		no	yes	2
715	Male	17.000000	1.844749	59.313525		yes	yes	2
716	Male	17.203917	1.853325	59.619485		yes	yes	2
717	Male	17.671064	1.854706	59.209450		yes	yes	2
718	Female	21.310907	1.720640	50.000000		yes	yes	2
719	Female	21.708354	1.704167	50.165754		yes	yes	2
720	Female	22.176922	1.717460	51.491957		yes	yes	2
721	Female	17.823438	1.708406	50.000000		no	yes	1
722	Female	18.000000	1.763465	50.279053		no	yes	1
723	Female	18.281092	1.700000	50.000000		no	yes	1
724	Female	18.656912	1.574017	41.220175		no	yes	1
725	Female	19.994543	1.537739	39.101805		no	yes	1
726	Female	20.255616	1.534223	41.268597		no	yes	2
727	Male	19.865895	1.760330	55.370700		yes	yes	2
728	Male	17.888073	1.841879	60.000000		yes	yes	3
729	Male	18.470562	1.856406	58.673963		yes	yes	2

730	Male	17.925497	1.829142	59.933015	yes	yes	2
731	Male	17.000752	1.822084	58.443049	yes	yes	2
732	Male	17.362129	1.806710	59.243506	yes	yes	2
733	Male	18.000000	1.707259	50.664459	yes	yes	1
734	Male	18.000000	1.708107	51.314659	yes	yes	1
735	Male	18.000000	1.739344	50.951444	yes	yes	1
736	Female	19.029494	1.573987	44.316254	no	no	2
737	Female	19.269079	1.580920	44.753943	no	no	3
738	Female	19.946244	1.603435	45.000000	no	no	3
739	Female	19.639431	1.535350	42.000000	no	yes	3
740	Female	19.000000	1.531610	42.000000	no	yes	2
741	Female	19.434709	1.525691	42.000000	no	yes	3
742	Male	18.000000	1.719827	52.289828	yes	yes	1
743	Male	18.381382	1.722547	53.783977	yes	yes	2
744	Male	18.000000	1.738702	50.248677	yes	yes	1
745	Male	26.698580	1.816298	86.963765	no	yes	2
746	Male	21.125836	1.638085	70.000000	no	yes	2
747	Male	25.191627	1.813678	85.637789	no	yes	1
748	Male	21.963457	1.697228	75.577100	yes	yes	2
749	Male	21.000000	1.617469	68.869791	no	yes	1
750	Male	19.114981	1.855543	88.965521	yes	yes	2
751	Female	41.823567	1.721854	82.919584	no	yes	2
752	Male	21.142432	1.855353	86.413388	yes	yes	2
753	Male	21.962426	1.696336	75.000000	yes	yes	2
754	Female	18.836315	1.751631	80.000000	yes	yes	2
755	Male	23.572648	1.698346	75.000000	yes	yes	2
756	Female	33.700749	1.642971	74.803157	yes	no	3
757	Female	21.845025	1.613668	68.126955	yes	yes	1
758	Male	21.000000	1.605404	68.226511	no	yes	2
759	Female	35.125401	1.529834	62.903938	no	yes	2
760	Female	26.760040	1.550000	60.007701	---	---	2

760	Female	30.709040	1.5500000	62.331121		yes	yes	2
761	Female	21.868932	1.731261	78.175706		yes	yes	2
762	Male	22.549208	1.629194	70.000000		no	yes	2
763	Male	21.000000	1.620000	70.000000		no	yes	2
764	Male	21.000000	1.620000	70.000000		no	yes	2
765	Female	30.958957	1.633491	68.803694		yes	yes	2
766	Male	21.017383	1.752391	79.109637		yes	yes	3
767	Male	19.623574	1.818226	85.833029		yes	yes	2
768	Male	19.637947	1.809101	85.000000		yes	yes	3
769	Male	21.413642	1.709484	75.000000		yes	yes	2
770	Male	21.029633	1.607082	67.722222		yes	yes	2
771	Female	22.667596	1.718939	75.951472		yes	yes	2
772	Male	20.000000	1.831357	89.652557		yes	yes	2
773	Female	21.811190	1.600000	66.401407		yes	yes	2
774	Female	21.000000	1.754813	77.929204		yes	yes	2
775	Male	18.128206	1.778447	80.273807		yes	yes	1
776	Male	21.000000	1.709561	75.000000		yes	yes	2
777	Female	29.081070	1.674568	71.602622		yes	yes	2
778	Male	26.358919	1.755317	82.228794		yes	yes	1
779	Male	22.717249	1.708071	75.000000		yes	yes	2
780	Male	19.816949	1.806947	85.079589		yes	yes	2
781	Female	24.023972	1.599697	64.808022		no	yes	2
782	Female	32.593129	1.721903	72.748903		yes	yes	2
783	Male	23.000000	1.712556	75.480764		yes	yes	3
784	Female	16.941489	1.551288	54.932420		no	yes	1
785	Female	16.172992	1.603842	65.000000		yes	yes	2
786	Female	23.712590	1.588597	62.339003		no	yes	2
787	Female	35.194089	1.673482	73.193589		yes	no	3
788	Male	23.172982	1.858624	88.675503		yes	yes	2
789	Female	37.218161	1.593894	63.320629		yes	yes	2
790	Male	19.076443	1.620000	69.529625		no	yes	2

791	Female	16.306870	1.616366	67.183128	yes	yes	1
792	Female	18.297229	1.637396	70.000000	yes	yes	2
793	Female	18.610761	1.550723	60.628321	no	yes	2
794	Female	17.451085	1.600000	65.000000	yes	yes	3
795	Male	29.740496	1.820471	87.668828	no	yes	3
796	Female	31.539393	1.657496	73.641633	yes	yes	2
797	Male	18.026457	1.752123	80.000000	yes	yes	2
798	Male	19.475540	1.857231	88.138777	yes	yes	2
799	Female	19.000000	1.760000	79.544998	yes	yes	2
800	Female	18.000000	1.644682	68.392133	yes	yes	2
801	Female	18.270434	1.737165	76.699774	yes	yes	2
802	Female	19.816228	1.507853	64.259379	no	yes	2
803	Male	28.391240	1.810060	87.286783	no	yes	3
804	Male	26.758516	1.801790	86.981202	no	yes	2
805	Male	21.033794	1.625891	70.000000	no	yes	2
806	Male	22.429812	1.640370	70.000000	no	yes	2
807	Male	26.650419	1.791047	83.263120	no	yes	1
808	Male	21.618246	1.679306	75.000000	yes	yes	2
809	Female	21.012542	1.615145	68.653347	yes	yes	1
810	Female	21.071195	1.616467	68.771850	yes	yes	1
811	Male	19.741202	1.816783	86.522799	yes	yes	2
812	Male	19.216380	1.812472	86.748295	yes	yes	2
813	Female	42.244750	1.768231	75.629310	yes	yes	3
814	Male	22.283082	1.870931	89.251639	yes	yes	2
815	Male	21.086512	1.863685	89.558854	yes	yes	2
816	Male	23.451595	1.670227	75.000000	yes	yes	2
817	Male	22.740275	1.717288	75.948164	yes	yes	2
818	Male	18.900253	1.750359	79.828725	yes	yes	2
819	Male	23.170309	1.707557	75.306702	yes	yes	2
820	Female	32.997118	1.672446	74.812707	yes	yes	2
821	Female	32.501143	1.675979	74.959747	yes	yes	2

822	Female	21.938831	1.611239	67.939653	yes	yes	1
823	Female	21.909534	1.611356	68.066090	yes	yes	1
824	Male	21.000000	1.620000	70.000000	no	yes	2
825	Female	37.455752	1.508908	63.183846	yes	yes	2
826	Female	40.000000	1.561109	62.871794	yes	yes	2
827	Female	38.943282	1.554728	63.011645	yes	yes	2
828	Female	21.987341	1.730182	78.554440	yes	yes	2
829	Female	21.198217	1.743841	78.880360	yes	yes	2
830	Male	21.000000	1.620000	70.000000	no	yes	2
831	Male	21.000000	1.620000	70.000000	no	yes	2
832	Male	21.000000	1.620000	70.000000	no	yes	2
833	Male	21.000000	1.620000	70.000000	no	yes	2
834	Male	21.000000	1.620000	70.000000	no	yes	2
835	Female	29.320380	1.642506	69.906708	yes	yes	2
836	Female	31.255587	1.693080	71.927379	yes	yes	2
837	Male	22.851773	1.752115	79.414603	yes	yes	3
838	Male	26.000000	1.745033	80.000000	yes	yes	2
839	Male	19.789291	1.820643	85.000000	yes	yes	3
840	Male	19.895877	1.807330	85.073801	yes	yes	2
841	Male	19.693804	1.800000	85.000000	yes	yes	2
842	Male	19.226314	1.814255	85.255631	yes	yes	2
843	Male	21.652229	1.700181	75.057177	yes	yes	2
844	Female	21.687409	1.604697	68.016472	yes	yes	1
845	Female	21.455463	1.611000	68.107866	yes	yes	1
846	Female	21.000000	1.754497	77.956921	yes	yes	2
847	Female	21.000000	1.752944	77.965532	yes	yes	2
848	Male	19.337404	1.859927	87.105828	yes	yes	2
849	Male	21.701643	1.896073	90.524460	yes	yes	2
850	Male	21.620245	1.605314	66.621646	yes	yes	2
851	Female	21.012569	1.758628	78.370039	yes	yes	3

852	Female	21.016623	1.755427	78.300084		yes	yes	3
853	Female	19.000000	1.779882	80.091886		yes	yes	1
854	Male	21.000000	1.712061	75.000000		yes	yes	2
855	Male	21.000000	1.676014	75.000000		yes	yes	2
856	Female	27.899784	1.700000	74.244004		yes	yes	2
857	Male	28.825223	1.765874	82.045045		yes	yes	1
858	Male	26.047077	1.745950	80.018571		yes	yes	1
859	Male	23.000000	1.690196	75.000000		yes	yes	2
860	Male	20.000000	1.817480	85.000000		yes	yes	2
861	Female	21.832995	1.580964	65.363941		no	yes	2
862	Female	30.255744	1.652084	73.575981		yes	yes	2
863	Female	30.613586	1.645511	69.168978		yes	yes	2
864	Male	23.245408	1.707968	75.383716		yes	yes	2
865	Female	18.000000	1.456346	55.523481		no	yes	2
866	Female	18.000000	1.498561	55.376512		no	yes	2
867	Female	16.950499	1.603501	65.000000		yes	yes	2
868	Female	21.837058	1.558045	63.597633		no	yes	2
869	Female	27.000000	1.550000	62.877347		no	yes	2
870	Female	35.483601	1.647514	73.916920		yes	no	3
871	Male	23.801436	1.855779	86.098523		yes	yes	2
872	Male	23.367212	1.853223	87.083266		yes	yes	2
873	Female	40.000000	1.570811	62.211572		yes	yes	2
874	Female	16.380090	1.617124	67.913561		yes	yes	2
875	Female	16.865984	1.644053	67.439589		yes	yes	1
876	Female	16.093234	1.608914	65.000000		yes	yes	1
877	Female	18.000000	1.647971	68.818893		yes	yes	2
878	Female	18.839190	1.624831	69.975607		yes	yes	2
879	Female	19.726522	1.508267	61.104030		no	yes	2
880	Female	18.947102	1.518917	60.267427		no	yes	2
881	Female	17.781183	1.600000	65.000000		yes	yes	3
882	Male	33.100581	1.838791	87.857850		no	yes	2

883	Female	33.251015	1.730379	75.920519	yes	yes	2
884	Female	18.985119	1.759117	80.000000	yes	yes	2
885	Female	18.871917	1.755254	80.000000	yes	yes	2
886	Male	19.478533	1.804099	85.196279	yes	yes	2
887	Male	19.429723	1.813567	86.144904	yes	yes	2
888	Female	20.979254	1.756550	78.721696	yes	yes	2
889	Female	18.869151	1.756774	79.989789	yes	yes	2
890	Female	18.236087	1.620000	69.389900	yes	yes	2
891	Female	20.901393	1.709585	75.000000	yes	yes	2
892	Female	17.085250	1.535618	57.259124	no	yes	1
893	Male	25.785925	1.818848	87.032398	no	yes	2
894	Male	26.787842	1.817641	87.107317	no	yes	2
895	Male	21.037514	1.636592	70.000000	no	yes	2
896	Male	21.008290	1.621412	70.000000	no	yes	2
897	Male	26.703710	1.802871	85.770013	yes	yes	2
898	Male	21.731497	1.696201	75.399191	yes	yes	2
899	Male	21.052894	1.694633	75.052200	yes	yes	2
900	Female	21.000000	1.618148	68.981403	yes	yes	1
901	Male	19.241058	1.856811	88.633616	yes	yes	2
902	Female	38.939448	1.738321	86.934846	no	yes	2
903	Female	39.965474	1.739293	80.914382	no	yes	2
904	Male	20.261925	1.807538	85.316125	yes	yes	2
905	Male	20.310940	1.849425	85.228116	yes	yes	2
906	Male	21.420537	1.712473	75.000000	yes	yes	2
907	Female	18.845518	1.753471	80.000000	yes	yes	2
908	Male	23.562135	1.717432	75.371244	yes	yes	2
909	Male	23.118327	1.677573	75.000000	yes	yes	2
910	Female	33.732714	1.679725	74.885222	yes	yes	3
911	Female	21.571288	1.600914	68.058902	yes	yes	1
912	Female	21.165574	1.617749	68.908136	yes	yes	1
913	Male	21.000000	1.610000	68.925000	--	--	1

913	Male	21.000000	1.610209	60.000000		no	yes	1
914	Male	21.000000	1.612556	69.463458		no	yes	2
915	Female	38.692265	1.548178	62.341438		yes	yes	2
916	Female	38.952866	1.568441	62.855073		yes	yes	2
917	Female	36.631456	1.532322	62.417228		yes	yes	2
918	Female	21.996118	1.730199	78.997062		yes	yes	2
919	Female	21.951309	1.730167	78.429312		yes	yes	2
920	Male	22.018228	1.627396	70.000000		no	yes	2
921	Male	21.000000	1.620000	70.000000		no	yes	2
922	Male	21.000000	1.620000	70.000000		no	yes	2
923	Male	21.000000	1.620000	70.000000		no	yes	2
924	Female	29.934465	1.638744	69.242354		yes	yes	2
925	Female	31.166572	1.680858	71.813380		yes	yes	2
926	Female	20.534606	1.758372	79.469513		yes	yes	2
927	Male	19.971660	1.822573	85.084364		yes	yes	2
928	Male	19.627000	1.815409	85.302146		yes	yes	2
929	Male	21.929387	1.698049	75.000000		yes	yes	2
930	Female	21.009437	1.606810	67.773914		yes	yes	2
931	Female	21.538225	1.610327	67.999778		yes	yes	1
932	Male	22.828435	1.710415	75.142858		yes	yes	2
933	Male	22.814657	1.716289	75.688433		yes	yes	2
934	Male	19.576682	1.834715	89.429199		yes	yes	2
935	Female	21.814653	1.611822	67.140367		yes	yes	1
936	Female	21.979769	1.600000	66.126964		yes	yes	2
937	Female	21.000000	1.753578	77.979170		yes	yes	2
938	Female	21.028500	1.742364	78.664618		yes	yes	2
939	Male	18.721041	1.775626	80.113493		yes	yes	1
940	Male	21.000000	1.714253	75.000000		yes	yes	2
941	Male	21.000000	1.693628	75.000000		yes	yes	2
942	Female	29.463168	1.659172	71.170001		yes	yes	2
943	Male	24.284861	1.776347	82.329047		yes	yes	1

944	Male	26.288417	1.767806	82.694689	yes	yes	1
945	Male	23.455324	1.702516	75.000000	yes	yes	2
946	Male	19.637203	1.814182	85.301029	yes	yes	2
947	Female	22.239836	1.599940	65.423942	no	yes	2
948	Female	31.626380	1.666023	72.906186	yes	yes	2
949	Male	23.000000	1.701584	75.093569	yes	yes	3
950	Male	22.874658	1.713343	75.828119	yes	yes	2
951	Female	17.420269	1.489409	53.620604	no	yes	1
952	Female	17.807828	1.518067	55.822119	no	yes	1
953	Female	16.240576	1.616533	65.062945	yes	yes	2
954	Female	23.252457	1.589616	65.127324	no	yes	2
955	Female	34.772902	1.675612	73.501233	yes	yes	3
956	Male	22.766227	1.874061	89.754302	yes	yes	2
957	Female	39.214514	1.580765	62.631382	yes	yes	2
958	Male	19.858973	1.620000	69.575315	no	yes	2
959	Female	16.370009	1.613921	66.738769	yes	yes	2
960	Female	17.992717	1.618683	67.193585	yes	yes	1
961	Male	19.179932	1.637537	70.000000	yes	yes	2
962	Female	19.621545	1.566524	61.616000	no	yes	2
963	Female	19.755797	1.542328	63.856193	no	yes	2
964	Female	17.099015	1.600000	65.000000	yes	yes	3
965	Female	17.258130	1.600184	65.000000	yes	yes	2
966	Male	29.153907	1.773656	87.070234	no	yes	1
967	Female	32.278869	1.646020	74.147443	yes	yes	2
968	Female	31.793937	1.650150	73.810728	yes	yes	2
969	Male	18.014333	1.751029	80.000000	yes	yes	2
970	Male	19.685000	1.838266	89.496905	yes	yes	2
971	Male	19.506389	1.824449	87.656029	yes	yes	2
972	Female	19.000000	1.760000	79.349221	yes	yes	2
973	Female	18.000000	1.622241	68.250249	yes	yes	2
974	Female	18.003153	1.729996	75.816864	yes	yes	2

975	Female	18.052394	1.725233	75.970712	yes	yes	2
976	Female	19.774317	1.541039	64.726948	no	yes	2
977	Male	21.180346	1.773766	89.282820	yes	yes	2
978	Male	21.793724	1.754630	89.068227	yes	yes	2
979	Male	20.880161	1.674327	80.000000	yes	yes	2
980	Male	21.183540	1.720000	80.555875	yes	yes	2
981	Male	32.774488	1.913241	101.482054	yes	yes	2
982	Male	31.327609	1.737984	82.523113	yes	yes	2
983	Male	29.956198	1.703688	82.207978	yes	yes	2
984	Male	21.403421	1.716308	80.000000	yes	yes	2
985	Male	22.591439	1.650000	80.000000	yes	yes	2
986	Female	28.583944	1.578560	65.522744	yes	no	2
987	Male	38.825189	1.780846	85.687751	yes	yes	2
988	Male	35.217173	1.823168	91.630257	yes	yes	2
989	Female	20.392665	1.525234	65.220249	yes	no	2
990	Female	22.154854	1.481682	61.373868	yes	no	2
991	Male	19.108796	1.768578	87.803311	yes	yes	2
992	Female	20.707680	1.569878	69.743323	yes	no	2
993	Female	20.634694	1.568188	67.904023	yes	no	2
994	Male	22.052152	1.792527	89.994415	yes	yes	1
995	Male	22.869778	1.795311	89.868784	yes	yes	1
996	Female	22.909992	1.700038	80.000000	yes	yes	2
997	Female	23.000000	1.668649	80.458343	yes	yes	2
998	Male	24.679807	1.700000	84.687554	yes	yes	2
999	Male	23.884212	1.713825	83.952968	yes	yes	2
1000	Female	25.461411	1.700000	78.055968	yes	yes	2
1001	Male	31.333798	1.835381	91.059595	yes	yes	2
1002	Male	24.108711	1.700000	80.761409	yes	yes	2
1003	Female	28.830558	1.700000	78.000000	yes	yes	3
1004	Male	17.570089	1.700000	83.199034	yes	no	2

1005	Female	19.027574	1.659877	77.272652		yes	yes	2
1006	Male	25.632447	1.836943	96.192662		yes	yes	1
1007	Male	22.943130	1.819614	93.086419		yes	yes	1
1008	Male	23.285553	1.717775	85.312639		yes	yes	2
1009	Male	23.000000	1.791867	90.000000		yes	yes	2
1010	Female	25.192910	1.700000	80.749657		yes	yes	2
1011	Male	34.389906	1.681080	83.568035		yes	yes	2
1012	Female	26.595893	1.660756	78.574786		yes	yes	2
1013	Male	55.246250	1.769269	80.491339		no	yes	2
1014	Male	34.543563	1.765188	85.000000		yes	yes	2
1015	Male	21.808159	1.650000	80.000000		yes	yes	2
1016	Male	18.118277	1.654757	80.000000		yes	yes	2
1017	Female	42.189023	1.647768	79.165306		yes	yes	2
1018	Male	22.000000	1.691303	80.539000		yes	yes	2
1019	Female	28.770852	1.532897	65.031879		yes	no	2
1020	Female	25.483381	1.565288	64.848627		yes	no	2
1021	Female	21.673150	1.500000	63.652330		yes	no	2
1022	Female	23.469538	1.507106	64.814109		yes	no	2
1023	Male	23.000000	1.700740	81.322970		yes	yes	2
1024	Male	23.000000	1.715118	81.650778		yes	yes	2
1025	Female	38.464538	1.696423	78.967919		yes	yes	3
1026	Female	37.496175	1.653088	80.000000		yes	yes	2
1027	Female	33.690239	1.681842	77.426465		yes	yes	3
1028	Female	34.369686	1.652202	77.133220		yes	yes	2
1029	Male	31.426573	1.848683	99.000000		yes	yes	2
1030	Male	34.288249	1.835678	96.018510		yes	yes	2
1031	Female	18.863875	1.560029	71.728069		yes	no	3
1032	Female	18.951144	1.621048	72.105856		yes	no	3
1033	Male	19.671876	1.699474	78.000000		yes	no	1
1034	Male	50.832559	1.745528	82.130728		yes	yes	2
1035	Male	17.971574	1.720379	85.000000		yes	yes	2

1036	Male	18.000000	1.758787	85.050558	yes	yes	2
1037	Male	18.701766	1.704908	81.384224	yes	yes	2
1038	Female	34.389679	1.691322	77.561602	yes	yes	3
1039	Male	17.178483	1.786290	95.277392	yes	yes	2
1040	Male	33.081600	1.705617	83.016968	yes	yes	2
1041	Male	33.270448	1.733439	84.753830	yes	yes	2
1042	Female	36.310292	1.701397	83.000000	yes	yes	2
1043	Female	20.000000	1.625236	74.433362	yes	no	2
1044	Female	18.549437	1.545196	72.467862	yes	no	3
1045	Male	34.243146	1.843172	92.695510	yes	yes	2
1046	Male	23.320120	1.705813	82.011962	yes	yes	2
1047	Male	19.703095	1.704141	78.790936	yes	no	1
1048	Male	19.223259	1.706082	78.073528	yes	no	1
1049	Male	29.695603	1.842943	93.798055	yes	yes	2
1050	Male	27.000000	1.880992	99.623778	yes	yes	2
1051	Male	21.027662	1.726774	82.853749	yes	yes	2
1052	Male	33.015258	1.731960	84.315608	yes	yes	2
1053	Male	18.000000	1.751278	86.963628	yes	no	3
1054	Male	30.553097	1.780448	88.431954	yes	yes	2
1055	Male	33.000000	1.850000	97.920350	yes	yes	2
1056	Male	24.911994	1.785241	88.037480	yes	yes	1
1057	Male	24.444846	1.718845	86.319887	yes	yes	2
1058	Female	19.911246	1.530248	68.850970	yes	no	2
1059	Female	34.204408	1.664927	80.386078	yes	yes	2
1060	Female	34.281681	1.673333	77.205685	yes	yes	2
1061	Male	23.384374	1.725587	82.480214	yes	yes	2
1062	Female	43.238402	1.733875	86.945380	yes	yes	2
1063	Female	45.000000	1.675953	79.668320	yes	yes	2
1064	Male	22.087389	1.786238	89.802492	yes	yes	1
1065	Male	21.378039	1.718534	80.000000	yes	yes	2
1066	Male	21.200201	1.010513	101.511590	yes	yes	2

1066	Female	31.390201	1.919343	101.044509		yes	yes	2
1067	Male	31.484494	1.707613	82.586893		yes	yes	2
1068	Male	21.709159	1.658393	80.000000		yes	yes	2
1069	Female	30.711381	1.536819	65.912688		yes	no	2
1070	Male	34.821442	1.805459	90.138680		yes	yes	2
1071	Female	20.843363	1.521008	67.083121		yes	no	2
1072	Male	19.443639	1.744733	87.279890		yes	yes	2
1073	Female	20.492077	1.529223	65.140408		yes	no	2
1074	Male	22.944349	1.799742	89.981680		yes	yes	1
1075	Female	23.000000	1.681314	80.037202		yes	yes	2
1076	Male	24.068940	1.706912	85.743727		yes	yes	2
1077	Female	23.728707	1.663509	80.000000		yes	yes	2
1078	Male	29.216019	1.752265	88.096062		yes	yes	2
1079	Male	24.751511	1.735343	83.337721		yes	yes	2
1080	Female	28.977792	1.700000	78.000000		yes	yes	3
1081	Male	17.441593	1.700000	83.414072		yes	no	2
1082	Female	19.126145	1.633794	77.858532		yes	no	2
1083	Male	24.122589	1.856759	95.887056		yes	yes	1
1084	Male	23.000000	1.774330	90.000000		yes	yes	2
1085	Female	28.824194	1.700000	78.000000		yes	yes	3
1086	Male	34.204611	1.719509	84.416515		yes	yes	2
1087	Female	28.167799	1.658202	78.000000		yes	yes	2
1088	Male	55.137881	1.657221	80.993213		yes	yes	2
1089	Male	34.970367	1.713348	84.722222		yes	yes	2
1090	Male	20.986834	1.677178	80.379575		yes	yes	2
1091	Female	38.378056	1.678050	77.224574		yes	yes	2
1092	Male	22.188810	1.717722	81.929910		yes	yes	2
1093	Female	21.082384	1.486484	60.117993		yes	no	2
1094	Female	25.293202	1.503379	64.342459		yes	no	2
1095	Male	23.000000	1.718981	81.669950		yes	yes	2
1096	Female	39.170029	1.688354	79.278896		yes	yes	3

1097	Female	34.044229	1.665807	77.098973	yes	yes	2
1098	Male	33.182127	1.838441	97.029249	yes	yes	2
1099	Female	19.821996	1.653431	75.090439	yes	no	2
1100	Male	19.149706	1.699818	78.000000	yes	no	1
1101	Male	46.491859	1.718097	88.600878	yes	yes	2
1102	Male	17.894784	1.731389	84.064875	yes	no	2
1103	Male	18.884850	1.699667	79.677930	yes	no	2
1104	Female	38.384177	1.698626	78.637307	yes	yes	3
1105	Male	22.675679	1.823765	96.945262	yes	yes	1
1106	Male	33.049121	1.708742	83.001642	yes	yes	2
1107	Female	37.205173	1.667469	80.993373	yes	yes	2
1108	Female	19.027417	1.588147	73.939268	yes	no	3
1109	Male	37.492444	1.835024	92.368359	yes	yes	2
1110	Male	24.657598	1.708800	83.520113	yes	yes	2
1111	Male	18.011718	1.680991	79.752916	yes	yes	2
1112	Male	27.349745	1.835271	97.588260	yes	yes	2
1113	Male	18.000000	1.742819	86.565148	yes	yes	3
1114	Male	33.009285	1.741192	84.773349	yes	yes	2
1115	Male	18.000000	1.759721	86.080500	yes	yes	2
1116	Male	30.079371	1.810616	92.860254	yes	yes	2
1117	Male	25.035915	1.763101	88.532032	yes	yes	1
1118	Female	18.198322	1.543338	71.799982	yes	no	3
1119	Female	35.456326	1.651812	79.437921	yes	yes	2
1120	Male	23.806789	1.732492	84.557797	yes	yes	2
1121	Female	39.392569	1.706349	85.720788	yes	yes	2
1122	Male	21.384259	1.780679	89.667406	yes	yes	1
1123	Male	22.730414	1.758687	89.673648	yes	yes	2
1124	Male	21.205630	1.704573	80.000000	yes	yes	2
1125	Male	21.333429	1.716545	80.005809	yes	yes	2
1126	Male	32.787101	1.903832	99.812443	yes	yes	2
1127	Male	32.610018	1.742538	83.390983	yes	yes	2

1128	Male	30.022598	1.747739	83.314157	yes	yes	2
1129	Male	21.123048	1.717037	80.000000	yes	yes	2
1130	Female	22.989846	1.650000	80.000000	yes	yes	2
1131	Female	24.320154	1.577921	65.293179	yes	no	2
1132	Male	37.275298	1.746055	83.282232	yes	yes	2
1133	Male	34.098174	1.841151	91.798103	yes	yes	2
1134	Female	21.001282	1.517998	64.696248	yes	no	2
1135	Female	21.959940	1.483284	62.894283	yes	no	2
1136	Male	19.795269	1.758972	87.861431	yes	yes	2
1137	Female	19.090023	1.562434	70.442775	yes	no	2
1138	Female	20.820455	1.547066	67.473282	yes	no	2
1139	Male	22.087056	1.792435	89.998729	yes	yes	1
1140	Male	22.185756	1.784555	89.836692	yes	yes	1
1141	Female	22.980957	1.700216	80.473587	yes	yes	2
1142	Male	23.000000	1.672101	80.939733	yes	yes	2
1143	Male	24.190896	1.700000	84.849349	yes	yes	2
1144	Male	23.940030	1.721348	83.986714	yes	yes	2
1145	Female	26.591628	1.700000	78.008388	yes	yes	2
1146	Male	31.264628	1.803129	91.052215	yes	yes	2
1147	Female	23.629159	1.700020	80.420434	yes	yes	2
1148	Female	26.208134	1.700000	78.041338	yes	yes	2
1149	Male	17.689057	1.713599	83.285753	yes	yes	2
1150	Male	19.160970	1.662728	77.473204	yes	no	2
1151	Male	25.457630	1.837399	95.952027	yes	yes	1
1152	Male	22.988004	1.808270	91.363293	yes	yes	1
1153	Male	23.603191	1.714508	85.137113	yes	yes	2
1154	Male	22.882558	1.793451	89.909259	yes	yes	1
1155	Female	23.586058	1.700499	81.108599	yes	yes	2
1156	Male	34.432669	1.694997	84.451423	yes	yes	2
1157	Female	25.472995	1.688911	78.434492	yes	yes	2

1158	Male	55.022494	1.673394	80.400306	yes	yes	2
1159	Male	34.647036	1.769499	85.000000	yes	yes	2
1160	Male	21.997335	1.650000	80.000000	yes	yes	2
1161	Male	18.181821	1.662669	79.863546	yes	no	2
1162	Female	41.743333	1.678610	79.849252	yes	yes	2
1163	Male	21.473078	1.694423	80.311273	yes	yes	2
1164	Female	27.757187	1.505437	63.892071	yes	no	2
1165	Female	25.113537	1.505387	63.715219	yes	no	2
1166	Female	21.821650	1.491441	62.269912	yes	no	2
1167	Female	20.670975	1.509408	64.852953	yes	no	2
1168	Male	22.649792	1.685045	81.022119	yes	yes	2
1169	Male	23.154311	1.723072	82.338464	yes	yes	2
1170	Female	38.097395	1.696954	78.156035	yes	yes	3
1171	Female	37.642177	1.676095	79.079738	yes	yes	2
1172	Female	34.176795	1.681021	77.392179	yes	yes	2
1173	Female	34.231083	1.654067	79.697278	yes	yes	2
1174	Male	31.965402	1.840708	98.259423	yes	yes	2
1175	Male	33.185661	1.836007	97.416417	yes	yes	2
1176	Female	18.741188	1.556789	71.788181	yes	no	3
1177	Female	19.955257	1.589100	72.713611	yes	no	3
1178	Male	19.684891	1.700627	78.048207	yes	no	1
1179	Male	47.706100	1.743935	84.729197	yes	yes	2
1180	Male	17.997009	1.742654	85.000000	yes	no	2
1181	Male	17.971786	1.754441	85.002884	yes	yes	2
1182	Male	20.432717	1.719342	80.790813	yes	yes	2
1183	Female	33.954433	1.682253	77.431678	yes	yes	3
1184	Male	17.039058	1.799902	95.419668	yes	yes	2
1185	Male	33.070142	1.709428	83.014033	yes	yes	2
1186	Male	34.993835	1.752456	84.783756	yes	yes	2
1187	Male	35.719457	1.685947	83.325800	yes	yes	2
1188	Female	19.005725	1.599999	73.513873	yes	no	2

1189	Female	18.850466	1.550053	72.951800	yes	no	3
1190	Male	31.540751	1.828092	91.495718	yes	yes	2
1191	Male	23.335391	1.713380	82.085549	yes	yes	2
1192	Male	19.749627	1.680764	79.621463	yes	no	1
1193	Male	19.565496	1.705584	78.025625	yes	no	1
1194	Male	30.357745	1.841852	93.614246	yes	yes	2
1195	Male	27.000000	1.834986	99.083478	yes	yes	2
1196	Male	21.380336	1.724839	82.276350	yes	yes	2
1197	Male	33.151905	1.685127	83.986895	yes	yes	2
1198	Male	18.000000	1.750097	86.372141	yes	yes	2
1199	Male	32.241587	1.757961	87.906019	yes	yes	2
1200	Male	31.662814	1.848965	98.912261	yes	yes	2
1201	Male	24.347414	1.789193	89.393589	yes	yes	1
1202	Male	24.362124	1.716677	85.261339	yes	yes	2
1203	Female	19.462713	1.550122	69.936073	yes	no	2
1204	Female	35.432059	1.663178	80.135167	yes	yes	2
1205	Female	33.864257	1.679299	77.355417	yes	yes	2
1206	Male	23.807181	1.729177	82.527240	yes	yes	2
1207	Male	39.585811	1.719153	86.464843	yes	yes	2
1208	Female	45.821267	1.687326	80.413997	yes	yes	2
1209	Male	25.929746	1.772449	105.000000	yes	yes	3
1210	Male	26.042738	1.837117	105.712219	yes	yes	3
1211	Male	30.551762	1.784377	102.872505	yes	yes	2
1212	Male	39.759575	1.792507	101.780099	yes	yes	2
1213	Female	31.386405	1.556579	78.233341	yes	yes	2
1214	Female	25.706285	1.585547	80.351263	yes	yes	2
1215	Female	43.604901	1.569234	81.827288	yes	yes	2
1216	Female	42.316070	1.583943	81.936398	yes	yes	2
1217	Female	22.654316	1.621233	82.000000	yes	yes	1
1218	Female	22.679935	1.608400	82.603984	yes	yes	2
1219	Male	24.070524	1.732120	97.011865	yes	yes	2

ID	Gender	Age	Height	Weight	Waist	yes	yes	2
1220	Male	21.196152	1.650000	88.472359		yes	yes	2
1221	Female	22.596576	1.650052	87.272552		yes	yes	2
1222	Female	23.000000	1.644161	84.340406		yes	yes	2
1223	Female	37.356288	1.559499	77.268130		yes	yes	2
1224	Male	22.754646	1.734237	95.000000		yes	yes	2
1225	Male	23.252906	1.775815	97.813023		yes	yes	2
1226	Female	22.025438	1.640426	87.344156		yes	yes	3
1227	Female	18.086772	1.650000	82.136820		yes	yes	3
1228	Male	25.994393	1.753321	107.998815		yes	yes	3
1229	Female	40.821515	1.553026	77.745180		yes	yes	2
1230	Male	23.000000	1.706525	90.500055		yes	yes	2
1231	Female	37.955371	1.560648	80.000000		yes	yes	2
1232	Male	31.315593	1.673352	90.000000		yes	yes	2
1233	Male	22.661556	1.660324	94.189167		yes	yes	2
1234	Male	40.317787	1.786318	98.447311		yes	yes	2
1235	Male	23.365649	1.757691	95.361795		yes	yes	2
1236	Male	21.721270	1.712163	98.699971		yes	yes	2
1237	Male	35.389491	1.780000	100.847630		yes	yes	2
1238	Female	22.061461	1.600000	82.040318		yes	yes	1
1239	Female	23.000000	1.610820	82.532994		yes	yes	2
1240	Female	23.000000	1.665199	83.151150		yes	yes	2
1241	Female	40.951591	1.542122	80.000000		yes	yes	2
1242	Female	39.135634	1.507867	79.589580		yes	yes	2
1243	Male	26.271621	1.660955	90.000000		yes	yes	2
1244	Female	23.779235	1.553127	78.000000		yes	yes	2
1245	Male	20.586978	1.781952	102.910613		yes	yes	2
1246	Male	21.669478	1.750000	96.940255		yes	yes	2
1247	Female	23.000000	1.615854	80.615325		yes	yes	2
1248	Male	20.825962	1.793378	105.655037		yes	yes	2
1249	Male	18.178023	1.854780	114.774840		yes	yes	2

1250	Female	18.000000	1.685633	90.032671		yes	yes	2
1251	Female	18.267696	1.706343	93.348843		yes	yes	1
1252	Male	23.000000	1.791415	105.138073		yes	yes	2
1253	Male	23.000000	1.753716	106.491410		yes	yes	2
1254	Male	20.985900	1.780503	103.189532		yes	yes	2
1255	Male	21.504943	1.819867	106.038468		yes	yes	2
1256	Male	18.000000	1.791174	108.960600		yes	yes	2
1257	Male	18.000000	1.820930	108.742005		yes	yes	2
1258	Female	19.442663	1.627812	82.000000		yes	yes	1
1259	Female	22.865018	1.632118	82.000000		yes	yes	2
1260	Male	21.948577	1.773594	105.000789		yes	yes	2
1261	Male	21.214617	1.930416	118.560509		yes	yes	2
1262	Male	22.277859	1.947406	116.893105		yes	yes	2
1263	Female	37.832949	1.610867	80.000000		yes	yes	2
1264	Female	37.631769	1.513202	75.410647		yes	yes	2
1265	Male	17.673900	1.738465	97.185474		yes	yes	2
1266	Female	37.524551	1.567915	76.129784		yes	yes	2
1267	Female	43.510672	1.587546	76.126112		yes	yes	2
1268	Male	18.000000	1.820385	108.395005		yes	yes	2
1269	Male	18.000000	1.792239	108.244379		yes	yes	2
1270	Male	29.506287	1.826970	108.751502		yes	yes	2
1271	Female	18.000000	1.670058	86.242679		yes	yes	2
1272	Male	24.733308	1.639383	91.267087		yes	yes	1
1273	Male	29.000000	1.682916	89.991671		yes	yes	1
1274	Female	18.000000	1.609321	84.493156		yes	yes	2
1275	Male	21.098035	1.690437	96.366777		yes	yes	2
1276	Male	19.089595	1.700164	99.204695		yes	yes	2
1277	Female	18.312665	1.600740	82.249831		yes	yes	2
1278	Male	18.260079	1.801848	104.741914		yes	yes	2
1279	Male	26.004294	1.844751	105.025808		yes	yes	3
1280	Male	25.994746	1.811602	106.042142		yes	yes	3

1281	Male	36.726617	1.787521	100.624553	yes	yes	2
1282	Male	38.297259	1.789109	100.066268	yes	yes	2
1283	Female	30.163408	1.533364	78.030383	yes	yes	2
1284	Female	28.770039	1.580858	79.713492	yes	yes	2
1285	Female	42.337283	1.646390	86.639861	yes	yes	2
1286	Female	47.283374	1.643786	81.978743	yes	yes	2
1287	Female	22.518787	1.634342	82.414477	yes	yes	1
1288	Female	22.836315	1.604893	82.000000	yes	yes	1
1289	Male	23.000000	1.654961	94.790579	yes	yes	2
1290	Male	22.975526	1.701986	95.000000	yes	yes	2
1291	Male	22.720449	1.650000	89.139209	yes	yes	2
1292	Male	23.887569	1.657995	90.000000	yes	yes	2
1293	Female	23.000000	1.634688	82.628000	yes	yes	2
1294	Female	23.000000	1.628168	84.497980	yes	yes	2
1295	Female	38.148845	1.557808	79.661693	yes	yes	2
1296	Female	37.965430	1.560199	80.000000	yes	yes	2
1297	Male	22.771612	1.750384	95.324282	yes	yes	2
1298	Male	22.582371	1.753081	95.269089	yes	yes	2
1299	Female	21.008051	1.650000	88.126544	yes	yes	2
1300	Female	22.591026	1.650012	87.676154	yes	yes	2
1301	Female	16.129279	1.650000	85.583485	yes	yes	2
1302	Female	16.913841	1.634832	85.803809	yes	yes	2
1303	Male	29.438790	1.770126	108.602715	yes	yes	3
1304	Male	29.881301	1.758189	108.721893	yes	yes	3
1305	Female	43.591999	1.595165	77.354744	yes	yes	2
1306	Female	40.993179	1.567756	79.493626	yes	yes	2
1307	Male	22.936098	1.702825	93.638318	yes	yes	2
1308	Male	23.000000	1.735659	93.429205	yes	yes	2
1309	Female	37.597953	1.629010	80.000000	yes	yes	2
1310	Female	37.532066	1.615385	80.000000	yes	yes	2

1311	Male	31.630054	1.671705	90.000000	yes	yes	2
1312	Male	31.641081	1.676595	89.993812	yes	yes	2
1313	Male	21.872484	1.699998	95.564428	yes	yes	2
1314	Male	21.834894	1.722785	94.094184	yes	yes	2
1315	Male	36.023972	1.670667	90.575934	yes	yes	2
1316	Male	39.656559	1.789992	98.021766	yes	yes	2
1317	Male	24.184891	1.768834	97.449743	yes	yes	2
1318	Male	23.237302	1.761008	97.829344	yes	yes	2
1319	Male	35.322112	1.780000	102.265955	yes	yes	2
1320	Male	31.387982	1.810215	105.254354	yes	yes	2
1321	Female	23.000000	1.608469	82.954796	yes	yes	2
1322	Female	23.000000	1.630357	83.101100	yes	yes	2
1323	Female	22.679454	1.628260	82.967937	yes	yes	2
1324	Female	22.480889	1.605662	82.470375	yes	yes	1
1325	Female	41.403862	1.567973	81.056851	yes	yes	2
1326	Female	40.702771	1.548403	80.000000	yes	yes	2
1327	Male	29.389239	1.681855	90.000000	yes	yes	2
1328	Male	30.967417	1.688436	90.000000	yes	yes	2
1329	Female	23.474165	1.577115	78.000000	yes	yes	2
1330	Female	24.317607	1.586751	79.109029	yes	yes	2
1331	Male	17.052914	1.710616	99.860254	yes	yes	2
1332	Male	18.048920	1.721384	99.430612	yes	yes	2
1333	Female	22.875223	1.624367	82.000000	yes	yes	1
1334	Female	22.884722	1.622787	82.000000	yes	yes	1
1335	Male	18.729566	1.855433	112.875283	yes	yes	2
1336	Male	21.011124	1.856315	118.183797	yes	yes	2
1337	Female	18.603496	1.681719	90.671871	yes	yes	1
1338	Female	21.106056	1.722884	92.949254	yes	yes	1
1339	Male	23.000000	1.799406	106.528811	yes	yes	2
1340	Male	21.980847	1.819875	106.048516	yes	yes	2
1341	Male	21.016665	1.790172	105.042194	yes	yes	2

1342	Male	21.727380	1.783782	105.000276	yes	yes	2
1343	Male	18.000000	1.783906	109.207614	yes	yes	2
1344	Male	18.000000	1.844218	109.195529	yes	yes	2
1345	Female	19.431662	1.631662	82.000000	yes	yes	2
1346	Female	18.166318	1.649553	82.323954	yes	yes	2
1347	Male	22.352025	1.754711	105.000706	yes	yes	2
1348	Male	22.469351	1.762515	105.000097	yes	yes	2
1349	Male	19.524698	1.942725	121.657979	yes	yes	2
1350	Male	20.491475	1.975663	120.702935	yes	yes	2
1351	Female	39.213399	1.586301	80.000000	yes	yes	2
1352	Female	38.098745	1.598448	80.000000	yes	yes	2
1353	Male	19.034033	1.703098	98.296651	yes	yes	2
1354	Male	17.073648	1.706996	99.544696	yes	yes	2
1355	Female	38.547267	1.526472	75.150345	yes	yes	2
1356	Female	38.683794	1.501993	76.642944	yes	yes	2
1357	Male	18.000000	1.784402	108.413119	yes	yes	2
1358	Male	18.000000	1.792687	108.204547	yes	yes	2
1359	Male	29.622804	1.814052	109.411622	yes	yes	2
1360	Male	30.796260	1.789421	109.599453	yes	yes	2
1361	Female	18.000000	1.686904	90.004046	yes	yes	2
1362	Female	18.107092	1.703259	91.499683	yes	yes	1
1363	Male	31.335093	1.665798	89.738596	yes	yes	2
1364	Male	29.000000	1.666710	89.048151	yes	yes	1
1365	Female	18.011903	1.650000	84.210535	yes	yes	2
1366	Female	18.000000	1.649439	84.897738	yes	yes	2
1367	Male	21.077356	1.702002	97.971598	yes	yes	2
1368	Male	21.052016	1.693820	99.530971	yes	yes	2
1369	Female	18.078256	1.622999	82.403076	yes	yes	2
1370	Female	18.063582	1.633675	82.459577	yes	yes	2
1371	Male	20.418832	1.836669	105.257543	yes	yes	2
1372	Male	20.580984	1.798354	103.705418	yes	yes	2

1372	Male	20.000000	1.700000	100.700000			yes	yes 2
1373	Male	26.032416	1.824432	105.131956			yes	yes 3
1374	Male	25.955361	1.830384	105.479313			yes	yes 3
1375	Male	26.015448	1.829907	105.436173			yes	yes 3
1376	Male	25.920738	1.823755	105.800158			yes	yes 2
1377	Male	29.633715	1.834842	105.199360			yes	yes 2
1378	Male	32.895637	1.783901	103.771371			yes	yes 2
1379	Male	38.748307	1.782067	103.586342			yes	yes 2
1380	Male	39.685846	1.781032	96.303855			yes	yes 2
1381	Female	33.226808	1.557943	77.647716			yes	yes 2
1382	Female	26.220065	1.560258	78.435904			yes	yes 2
1383	Female	23.090215	1.596586	80.726195			yes	yes 1
1384	Female	24.565628	1.620930	81.718232			yes	yes 2
1385	Female	42.586285	1.571417	81.918809			yes	yes 2
1386	Female	43.719395	1.584322	80.986496			yes	yes 2
1387	Female	43.376340	1.582523	81.919454			yes	yes 2
1388	Female	39.648946	1.572791	80.086524			yes	yes 2
1389	Female	22.693989	1.627908	82.000000			yes	yes 1
1390	Female	22.676243	1.620938	82.283185			yes	yes 1
1391	Female	22.804818	1.613119	82.636162			yes	yes 2
1392	Female	22.857123	1.626860	82.410189			yes	yes 2
1393	Male	23.096353	1.728183	97.959899			yes	yes 2
1394	Male	22.815416	1.732694	98.441130			yes	yes 2
1395	Female	21.020640	1.650000	88.129437			yes	yes 2
1396	Female	21.001458	1.650000	88.026943			yes	yes 2
1397	Female	22.877950	1.669130	86.002736			yes	yes 2
1398	Female	22.847618	1.669136	85.568385			yes	yes 2
1399	Female	23.000000	1.611058	84.191125			yes	yes 2
1400	Female	23.000000	1.649736	84.134712			yes	yes 2
1401	Female	39.129291	1.532643	77.550345			yes	yes 2
1402	Female	37.441044	1.524293	76.202761			yes	yes 2

1403	Male	22.969366	1.701634	95.000000	yes	yes	2
1404	Male	22.735328	1.723921	94.743892	yes	yes	2
1405	Male	23.324710	1.769484	96.078462	yes	yes	2
1406	Male	23.668137	1.777416	97.842406	yes	yes	2
1407	Female	21.895468	1.644560	88.119139	yes	yes	2
1408	Female	21.392800	1.641149	88.079177	yes	yes	2
1409	Female	18.178076	1.642892	82.144405	yes	yes	2
1410	Female	18.907514	1.650000	82.018310	yes	yes	3
1411	Male	26.011928	1.777251	106.452367	yes	yes	3
1412	Male	25.696736	1.814696	107.559630	yes	yes	2
1413	Female	40.466313	1.559005	77.601483	yes	yes	2
1414	Female	38.445148	1.556028	77.684229	yes	yes	2
1415	Male	24.473062	1.653751	91.204753	yes	yes	1
1416	Male	23.479181	1.680171	91.068054	yes	yes	1
1417	Female	38.397463	1.552648	80.000000	yes	yes	2
1418	Female	37.974483	1.560215	80.000000	yes	yes	2
1419	Male	31.783524	1.672959	90.000000	yes	yes	2
1420	Male	29.681308	1.680058	89.994351	yes	yes	2
1421	Male	21.587743	1.664752	94.256547	yes	yes	2
1422	Male	21.746113	1.668553	94.454394	yes	yes	2
1423	Male	39.569004	1.785286	100.431625	yes	yes	2
1424	Male	36.679330	1.780725	98.790167	yes	yes	2
1425	Male	22.927011	1.751046	95.285898	yes	yes	2
1426	Male	23.329344	1.751365	95.290429	yes	yes	2
1427	Male	22.126325	1.717262	98.579156	yes	yes	2
1428	Male	21.679158	1.741393	98.182498	yes	yes	2
1429	Male	36.673882	1.792100	101.285765	yes	yes	2
1430	Male	37.936044	1.785957	99.199287	yes	yes	2
1431	Female	22.226815	1.609068	83.785312	yes	yes	2
1432	Female	22.538932	1.603963	82.012637	yes	yes	1
1433	Female	22.307413	1.605495	82.528575	yes	yes	2

<b>1434</b>	Female	22.362877	1.607182	82.368441	yes	yes	1
<b>1435</b>	Female	22.899740	1.661715	82.595793	yes	yes	1
<b>1436</b>	Female	22.997168	1.655742	82.463760	yes	yes	2
<b>1437</b>	Female	38.895069	1.549257	80.000000	yes	yes	2
<b>1438</b>	Female	40.789529	1.549748	80.000000	yes	yes	2
<b>1439</b>	Female	40.654155	1.529060	79.760922	yes	yes	2
<b>1440</b>	Female	38.542937	1.517248	79.843221	yes	yes	2
<b>1441</b>	Male	25.953830	1.657310	90.000000	yes	yes	2
<b>1442</b>	Male	26.826961	1.673287	90.000000	yes	yes	2
<b>1443</b>	Female	23.803904	1.581527	78.089575	yes	yes	2
<b>1444</b>	Female	23.652435	1.562724	80.535698	yes	yes	2
<b>1445</b>	Male	20.677105	1.781251	102.950929	yes	yes	2
<b>1446</b>	Male	21.797388	1.775584	103.605896	yes	yes	2
<b>1447</b>	Male	22.719385	1.746645	96.875502	yes	yes	2
<b>1448</b>	Male	22.177099	1.741353	96.738014	yes	yes	2
<b>1449</b>	Female	23.099906	1.571812	78.997166	yes	yes	2
<b>1450</b>	Female	24.178510	1.589027	80.553067	yes	yes	2
<b>1451</b>	Male	20.924808	1.803245	105.686091	yes	yes	2
<b>1452</b>	Male	20.975973	1.792646	105.619143	yes	yes	2
<b>1453</b>	Male	21.856301	1.871990	115.627554	yes	yes	2
<b>1454</b>	Male	18.140751	1.859056	111.235188	yes	yes	2
<b>1455</b>	Female	18.000000	1.692242	90.019501	yes	yes	2
<b>1456</b>	Female	18.000000	1.683000	90.924208	yes	yes	2
<b>1457</b>	Female	20.206358	1.738397	93.890682	yes	yes	1
<b>1458</b>	Female	18.152876	1.694969	92.508122	yes	yes	2
<b>1459</b>	Male	22.336216	1.785718	105.055686	yes	yes	2
<b>1460</b>	Male	23.000000	1.742500	105.028665	yes	yes	2
<b>1461</b>	Male	22.088059	1.803132	106.329569	yes	yes	2
<b>1462</b>	Male	23.000000	1.774644	105.966894	yes	yes	2
<b>1463</b>	Male	20.993067	1.782269	104.970030	yes	yes	2
-	-	-	-	-	-	-	-

<b>1464</b>	Male	20.654752	1.780791	102.921218		yes	yes	2
<b>1465</b>	Male	21.624552	1.790151	106.320686		yes	yes	2
<b>1466</b>	Male	21.682636	1.818641	105.496975		yes	yes	2
<b>1467</b>	Male	18.000000	1.806827	108.829395		yes	yes	2
<b>1468</b>	Male	18.000000	1.811189	108.800964		yes	yes	2
<b>1469</b>	Male	18.000000	1.811738	108.897324		yes	yes	2
<b>1470</b>	Male	18.000000	1.799779	108.934574		yes	yes	2
<b>1471</b>	Female	19.374207	1.632605	82.000000		yes	yes	2
<b>1472</b>	Female	19.275687	1.623377	82.851318		yes	yes	1
<b>1473</b>	Female	22.956845	1.618686	81.281578		yes	yes	2
<b>1474</b>	Female	22.829681	1.616085	82.582954		yes	yes	2
<b>1475</b>	Male	22.200779	1.769328	105.000576		yes	yes	2
<b>1476</b>	Male	21.688557	1.807029	105.696358		yes	yes	2
<b>1477</b>	Male	20.803186	1.882533	117.468516		yes	yes	2
<b>1478</b>	Male	19.515324	1.879144	112.932984		yes	yes	2
<b>1479</b>	Male	21.962219	1.931263	118.203130		yes	yes	2
<b>1480</b>	Male	20.534089	1.861358	115.397920		yes	yes	2
<b>1481</b>	Female	39.292660	1.567131	80.000000		yes	yes	2
<b>1482</b>	Female	37.872971	1.565366	80.000000		yes	yes	2
<b>1483</b>	Female	37.613378	1.516007	77.033049		yes	yes	2
<b>1484</b>	Female	37.471683	1.549812	76.082517		yes	yes	2
<b>1485</b>	Male	18.611197	1.714143	96.568814		yes	yes	2
<b>1486</b>	Male	17.412629	1.723191	97.350366		yes	yes	2
<b>1487</b>	Female	39.126310	1.562889	76.659490		yes	yes	2
<b>1488</b>	Female	37.063599	1.502609	75.279605		yes	yes	2
<b>1489</b>	Female	41.318302	1.544937	77.053948		yes	yes	2
<b>1490</b>	Female	43.726081	1.592316	77.001030		yes	yes	2
<b>1491</b>	Male	18.000000	1.787733	108.019211		yes	yes	2
<b>1492</b>	Male	18.000000	1.782722	108.044313		yes	yes	2
<b>1493</b>	Male	18.000000	1.797523	108.316462		yes	yes	2
<b>1494</b>	Male	18.000000	1.803527	108.251044		yes	yes	2

1495	Male	29.409825	1.801224	108.156190	yes	yes	2
1496	Male	28.421533	1.829239	107.108190	yes	yes	2
1497	Female	18.000000	1.692913	89.938890	yes	yes	2
1498	Female	18.000000	1.668555	85.607466	yes	yes	2
1499	Male	23.246702	1.652971	93.310284	yes	yes	1
1500	Male	24.481032	1.661277	90.744965	yes	yes	1
1501	Male	29.000000	1.641784	89.424947	yes	yes	1
1502	Male	27.968765	1.673767	89.995034	yes	yes	1
1503	Female	18.024744	1.617192	83.121811	yes	yes	2
1504	Female	18.106820	1.602129	82.412665	yes	yes	2
1505	Male	21.379676	1.701413	96.710735	yes	yes	2
1506	Male	21.353237	1.709731	95.032177	yes	yes	2
1507	Male	20.338815	1.698829	98.572753	yes	yes	2
1508	Male	20.720639	1.705304	99.873716	yes	yes	2
1509	Female	19.045357	1.612910	82.193405	yes	yes	1
1510	Female	18.945961	1.605469	82.039000	yes	yes	2
1511	Male	18.880610	1.804160	104.406820	yes	yes	2
1512	Male	19.850524	1.785062	104.187314	yes	yes	2
1513	Male	30.200946	1.755926	112.289883	yes	yes	2
1514	Male	25.314589	1.787802	115.127662	yes	yes	1
1515	Male	37.186795	1.704877	107.947470	yes	yes	2
1516	Male	32.707653	1.695347	102.810704	yes	yes	2
1517	Male	27.562425	1.908608	128.828122	yes	yes	2
1518	Male	30.421596	1.819296	122.137917	yes	yes	2
1519	Male	26.945139	1.773259	118.154345	yes	no	2
1520	Male	34.139453	1.774647	120.151967	yes	no	2
1521	Male	26.225442	1.773664	116.160329	yes	yes	2
1522	Male	28.363149	1.793476	112.725005	yes	yes	1
1523	Male	27.991467	1.825590	120.860386	yes	yes	3
1524	Male	25.498751	1.885543	121.253083	yes	yes	2
1525	Male	30.605225	1.750000	120.000000	yes	yes	2

1526	Male	31.457413	1.874070	128.867444		yes	yes	2
1527	Male	24.829290	1.755967	112.256165		yes	yes	1
1528	Male	24.739421	1.757069	117.298233		yes	yes	1
1529	Male	41.000000	1.750000	116.594351		yes	yes	2
1530	Male	27.831730	1.704028	101.634313		yes	yes	2
1531	Male	23.260061	1.849003	121.414744		yes	yes	3
1532	Male	22.705772	1.841989	122.024954		yes	yes	3
1533	Male	24.041043	1.613491	98.490766		yes	yes	3
1534	Male	20.013906	1.647821	106.509947		yes	yes	2
1535	Male	30.020190	1.758340	112.010504		yes	yes	1
1536	Male	25.154620	1.758398	112.089022		yes	yes	1
1537	Male	30.870724	1.670774	101.626189		yes	yes	2
1538	Male	28.712995	1.665585	98.661760		yes	yes	2
1539	Male	30.710511	1.914186	129.852531		yes	yes	2
1540	Male	29.827481	1.899588	124.269251		yes	yes	2
1541	Male	31.868930	1.750000	118.102897		yes	yes	2
1542	Male	36.542885	1.750000	119.434645		yes	yes	2
1543	Male	21.556361	1.773664	116.160329		yes	yes	2
1544	Male	23.963649	1.792998	116.102615		yes	yes	1
1545	Male	24.145295	1.825590	120.860386		yes	yes	2
1546	Male	25.298400	1.827279	120.996074		yes	yes	3
1547	Male	31.755387	1.775416	121.204668		yes	yes	2
1548	Male	30.628650	1.766975	118.363376		yes	yes	2
1549	Male	23.454558	1.754218	117.384745		yes	yes	1
1550	Male	23.432227	1.754996	119.087557		yes	yes	1
1551	Male	40.500210	1.748103	108.308112		yes	yes	2
1552	Male	34.576714	1.733250	103.669116		yes	yes	2
1553	Male	22.276969	1.849950	121.786485		yes	yes	3
1554	Male	21.963787	1.849601	122.333425		yes	yes	3
1555	Male	24.001685	1.606066	99.961731		yes	yes	3

1556	Male	20.027764	1.611434	103.175516		yes	yes	2
1557	Male	28.704462	1.762887	113.901980		yes	yes	2
1558	Male	26.774115	1.755938	112.287678		yes	yes	1
1559	Male	25.539411	1.787052	115.428276		yes	yes	1
1560	Male	25.300208	1.765258	114.330023		yes	yes	1
1561	Male	31.194458	1.726279	110.714711		yes	yes	1
1562	Male	40.794057	1.735851	109.889334		yes	yes	2
1563	Male	33.553360	1.699793	103.841672		yes	yes	2
1564	Male	30.304203	1.703202	103.034400		yes	yes	2
1565	Male	30.958051	1.906821	128.856677		yes	yes	2
1566	Male	29.429687	1.910987	129.935666		yes	yes	2
1567	Male	30.520854	1.784049	120.644178		yes	yes	2
1568	Male	30.610436	1.783914	120.549592		yes	yes	2
1569	Male	26.740655	1.863883	120.202596		yes	yes	2
1570	Male	26.680376	1.812259	118.277657		yes	yes	2
1571	Male	37.056193	1.750150	118.206565		yes	yes	2
1572	Male	28.825279	1.815347	120.399758		yes	yes	2
1573	Male	25.883749	1.767077	114.133149		yes	yes	2
1574	Male	25.486521	1.762461	115.531622		yes	yes	2
1575	Male	29.883021	1.779049	112.438508		yes	yes	2
1576	Male	26.957645	1.780731	112.957922		yes	yes	2
1577	Male	26.490926	1.872517	120.898397		yes	yes	2
1578	Male	27.558801	1.801224	119.050381		yes	yes	2
1579	Male	22.908879	1.876898	121.277832		yes	yes	2
1580	Male	24.201622	1.775580	120.589419		yes	yes	2
1581	Male	31.689773	1.765690	120.082941		yes	yes	2
1582	Male	30.242597	1.759772	118.382361		yes	yes	2
1583	Male	31.346845	1.823545	126.460936		yes	yes	2
1584	Male	30.577343	1.868923	125.064264		yes	yes	2
1585	Male	25.124595	1.771510	113.207124		yes	yes	1
1586	Male	25.509034	1.772190	114.097656		yes	yes	2

1587	Male	25.478662	1.858265	117.574570	yes	yes	2
1588	Male	25.100513	1.830596	118.424156	yes	yes	1
1589	Male	38.523646	1.765836	118.533246	yes	yes	2
1590	Male	38.712160	1.770278	117.291880	yes	yes	2
1591	Male	25.717522	1.673491	103.706181	yes	yes	2
1592	Male	32.259623	1.703346	102.686239	yes	yes	2
1593	Male	23.470070	1.842906	121.142535	yes	yes	3
1594	Male	24.408805	1.779547	118.740035	yes	yes	2
1595	Male	24.443011	1.873368	121.829620	yes	yes	2
1596	Male	22.906342	1.755902	120.021161	yes	yes	2
1597	Male	24.007488	1.617655	100.941357	yes	yes	2
1598	Male	30.686701	1.644517	100.004418	yes	yes	2
1599	Male	20.184451	1.701284	104.578255	yes	yes	2
1600	Male	25.447208	1.658910	104.548794	yes	yes	2
1601	Male	30.002029	1.759324	112.000381	yes	yes	1
1602	Male	30.188303	1.758382	112.100740	yes	yes	1
1603	Male	24.244029	1.622297	99.982541	yes	yes	2
1604	Male	24.521879	1.623278	97.582959	yes	yes	2
1605	Male	29.721964	1.918859	129.991623	yes	yes	2
1606	Male	29.906575	1.913252	129.232216	yes	yes	2
1607	Male	37.084742	1.750000	118.073810	yes	yes	2
1608	Male	39.088860	1.750000	119.029103	yes	yes	2
1609	Male	22.658572	1.784994	113.714521	yes	yes	1
1610	Male	22.889099	1.792533	116.157766	yes	yes	1
1611	Male	24.634740	1.829757	120.980508	yes	yes	2
1612	Male	24.920362	1.796415	120.988454	yes	yes	2
1613	Male	31.783845	1.750000	120.000000	yes	yes	2
1614	Male	31.627962	1.762389	118.548733	yes	yes	2
1615	Male	22.976188	1.825718	121.236915	yes	yes	2
1616	Male	22.977357	1.839699	120.431551	yes	yes	2
1617	...	10.070000	1.740105	100.000000	~		

1617	Male	40.973007	1.749405	109.908779	yes	yes	2
1618	Male	41.000000	1.750000	115.806977	yes	yes	2
1619	Male	21.721507	1.849998	122.119682	yes	yes	3
1620	Male	21.544554	1.849980	122.609911	yes	yes	3
1621	Male	24.000307	1.607939	100.618239	yes	yes	2
1622	Male	24.040900	1.603226	99.605527	yes	yes	3
1623	Male	29.509151	1.770663	112.471118	yes	yes	2
1624	Male	29.246269	1.758038	112.395309	yes	yes	2
1625	Male	25.341399	1.786997	115.025361	yes	yes	1
1626	Male	25.314163	1.771837	114.906095	yes	yes	1
1627	Male	40.366238	1.722396	109.349025	yes	yes	2
1628	Male	33.749594	1.701387	107.025415	yes	yes	2
1629	Male	32.867331	1.697421	103.017623	yes	yes	2
1630	Male	30.403205	1.696365	102.815983	yes	yes	2
1631	Male	29.687488	1.909198	129.679131	yes	yes	2
1632	Male	28.992809	1.909105	129.874864	yes	yes	2
1633	Male	30.475248	1.801368	121.094257	yes	yes	2
1634	Male	30.350516	1.860292	123.721352	yes	yes	2
1635	Male	26.684354	1.819535	118.332689	yes	yes	1
1636	Male	26.607478	1.793174	118.165082	yes	yes	2
1637	Male	33.174147	1.750150	118.299585	yes	yes	2
1638	Male	32.290160	1.754956	120.098812	yes	yes	2
1639	Male	26.050109	1.773115	115.089316	yes	yes	2
1640	Male	25.846279	1.772731	115.828167	yes	yes	2
1641	Male	29.620095	1.787933	112.536367	yes	yes	2
1642	Male	27.439056	1.785277	112.740797	yes	yes	2
1643	Male	28.493397	1.817572	120.815800	yes	yes	2
1644	Male	27.474245	1.843420	120.420406	yes	yes	2
1645	Male	25.036269	1.874519	121.244969	yes	yes	2
1646	Male	24.825398	1.796332	120.901591	yes	yes	2
1647	Male	30.493946	1.756221	119.117122	yes	yes	2

1648	Male	30.607546	1.757132	118.565568	yes	yes	2
1649	Male	31.194323	1.889104	129.157346	yes	yes	2
1650	Male	31.363470	1.869323	127.507411	yes	yes	2
1651	Male	25.027254	1.757154	112.200812	yes	yes	1
1652	Male	25.058566	1.764484	113.234349	yes	yes	1
1653	Male	24.417552	1.774775	117.398976	yes	yes	2
1654	Male	24.582200	1.769933	117.708705	yes	yes	1
1655	Male	40.106145	1.760175	117.651046	yes	yes	2
1656	Male	40.174191	1.763029	116.974504	yes	yes	2
1657	Male	27.186873	1.679515	102.872802	yes	yes	2
1658	Male	30.424369	1.699354	100.176866	yes	yes	2
1659	Male	23.141402	1.849307	121.658729	yes	yes	3
1660	Male	24.178638	1.867410	121.684311	yes	yes	2
1661	Male	22.832105	1.867140	121.835883	yes	yes	2
1662	Male	23.083621	1.848553	121.421121	yes	yes	3
1663	Male	24.079971	1.619810	98.543020	yes	yes	2
1664	Male	26.947786	1.647807	99.592225	yes	yes	2
1665	Male	20.101026	1.619128	104.303711	yes	yes	2
1666	Male	22.789402	1.641870	104.270062	yes	yes	2
1667	Male	28.404332	1.787379	112.173731	yes	yes	1
1668	Male	30.003358	1.758355	112.007101	yes	yes	1
1669	Male	25.136116	1.764140	113.089716	yes	yes	1
1670	Male	25.139466	1.767186	112.226032	yes	yes	1
1671	Male	31.743821	1.677820	102.022057	yes	yes	2
1672	Male	30.796262	1.668478	100.543983	yes	yes	2
1673	Male	28.393111	1.685462	99.540122	yes	yes	2
1674	Male	27.939820	1.694642	99.709329	yes	yes	2
1675	Male	31.034092	1.886109	129.349471	yes	yes	2
1676	Male	30.684347	1.915000	129.966428	yes	yes	2
1677	Male	30.108216	1.841908	124.070717	yes	yes	2
1678	Male	31.347497	1.868127	123.172214	yes	yes	2

1679	Male	31.761799	1.751688	119.205308		yes	yes	2
1680	Male	30.976932	1.755333	118.237782		yes	yes	2
1681	Male	37.588628	1.754217	117.897200		yes	yes	2
1682	Male	37.997912	1.760710	118.668332		yes	yes	2
1683	Male	21.654800	1.755938	116.311962		yes	yes	1
1684	Male	22.829753	1.765137	116.669906		yes	yes	1
1685	Male	25.015173	1.788239	115.382519		yes	yes	1
1686	Male	23.812795	1.767121	116.164351		yes	yes	1
1687	Male	23.975685	1.840039	120.975489		yes	yes	2
1688	Male	24.149036	1.824901	120.805715		yes	yes	2
1689	Male	25.062942	1.828391	120.998266		yes	yes	3
1690	Male	25.140074	1.829529	120.996581		yes	yes	3
1691	Male	30.722801	1.779325	120.751656		yes	yes	2
1692	Male	30.916426	1.781139	120.794535		yes	yes	2
1693	Male	31.010302	1.764166	119.373019		yes	yes	2
1694	Male	30.605464	1.754796	118.805937		yes	yes	2
1695	Male	24.622054	1.756509	117.368716		yes	yes	1
1696	Male	23.745833	1.756772	117.326523		yes	yes	1
1697	Male	23.327836	1.754439	119.441207		yes	yes	1
1698	Male	23.411141	1.755142	119.192922		yes	yes	2
1699	Male	39.825592	1.706741	108.012603		yes	yes	2
1700	Male	36.839761	1.742850	106.421042		yes	yes	2
1701	Male	33.789301	1.681100	102.523111		yes	yes	2
1702	Male	34.161998	1.705682	103.067766		yes	yes	2
1703	Male	22.580038	1.849507	121.560938		yes	yes	3
1704	Male	22.851721	1.853373	121.737836		yes	yes	2
1705	Male	23.254934	1.847530	122.062610		yes	yes	3
1706	Male	22.343204	1.870340	121.458232		yes	yes	2
1707	Male	24.006271	1.607787	100.783434		yes	yes	2
1708	Male	24.001196	1.603091	100.209405		yes	yes	3

1709	Male	20.156664	1.620109	103.393354	yes	yes	2
1710	Male	23.360307	1.610647	100.642257	yes	yes	2
1711	Male	28.986237	1.758618	113.501549	yes	yes	2
1712	Male	29.713169	1.763259	113.215814	yes	yes	2
1713	Male	27.394123	1.764138	112.323213	yes	yes	1
1714	Male	24.912254	1.755960	112.277567	yes	yes	1
1715	Male	25.526746	1.783381	115.347176	yes	yes	2
1716	Male	25.523127	1.786532	114.534678	yes	yes	2
1717	Male	25.822348	1.766626	114.187096	yes	yes	2
1718	Male	25.879411	1.765464	114.144378	yes	yes	1
1719	Male	30.361365	1.758530	111.635463	yes	yes	1
1720	Male	30.451174	1.758539	111.950413	yes	yes	1
1721	Male	40.564513	1.748015	109.758736	yes	yes	2
1722	Male	40.501722	1.744974	111.169678	yes	yes	2
1723	Male	30.315784	1.701566	103.743534	yes	yes	2
1724	Male	33.293166	1.696412	103.250355	yes	yes	2
1725	Male	30.638944	1.680489	102.004554	yes	yes	2
1726	Male	29.791101	1.703317	102.592171	yes	yes	2
1727	Male	31.205668	1.877732	127.161381	yes	yes	2
1728	Male	30.899219	1.909639	129.013178	yes	yes	2
1729	Male	29.669219	1.909188	129.194490	yes	yes	2
1730	Male	30.595632	1.910672	129.232708	yes	yes	2
1731	Male	30.554956	1.779136	120.600940	yes	yes	2
1732	Male	31.571392	1.767485	120.158049	yes	yes	2
1733	Male	30.577944	1.783953	120.613561	yes	yes	2
1734	Male	30.717727	1.767140	120.344402	yes	yes	2
1735	Male	26.734476	1.816197	119.622764	yes	yes	2
1736	Male	26.699317	1.839941	119.956651	yes	yes	2
1737	Male	25.659092	1.848420	117.631707	yes	yes	2
1738	Male	26.348156	1.830317	117.757010	yes	yes	2
1739	Male	37.638102	1.750085	118.114184	yes	yes	2

1740	Male	37.765356	1.763582	117.861590		yes	yes	2
1741	Male	28.255199	1.816547	120.699119		yes	yes	2
1742	Male	27.931432	1.805445	119.484614		yes	yes	2
1743	Male	25.492855	1.770124	114.163921		yes	yes	2
1744	Male	25.550506	1.772740	114.254278		yes	yes	2
1745	Male	25.542454	1.763215	115.108130		yes	yes	2
1746	Male	25.758307	1.766547	115.458450		yes	yes	2
1747	Male	29.981494	1.773181	112.348722		yes	yes	1
1748	Male	29.891473	1.760030	112.409191		yes	yes	2
1749	Male	26.778684	1.780089	113.154640		yes	yes	2
1750	Male	28.377958	1.766946	113.235538		yes	yes	2
1751	Male	26.199321	1.885119	121.065052		yes	yes	2
1752	Male	27.266287	1.828276	120.872294		yes	yes	2
1753	Male	27.635029	1.806227	120.423567		yes	yes	2
1754	Male	26.899886	1.812919	119.841446		yes	yes	2
1755	Male	22.758998	1.859717	121.284533		yes	yes	2
1756	Male	22.771001	1.865160	121.527369		yes	yes	2
1757	Male	23.826684	1.783609	120.921535		yes	yes	2
1758	Male	24.186273	1.794827	120.919703		yes	yes	2
1759	Male	30.945369	1.759647	120.009392		yes	yes	2
1760	Male	31.490699	1.773521	120.209711		yes	yes	2
1761	Male	31.567240	1.753327	118.265690		yes	yes	2
1762	Male	30.444081	1.761068	118.370628		yes	yes	2
1763	Male	31.199261	1.848845	125.077863		yes	yes	2
1764	Male	31.190219	1.842812	125.973927		yes	yes	2
1765	Male	30.575349	1.825449	124.952780		yes	yes	2
1766	Male	30.702559	1.861980	126.418413		yes	yes	2
1767	Male	25.057878	1.763987	113.069667		yes	yes	1
1768	Male	25.151286	1.761519	112.835195		yes	yes	1
1769	Male	25.137087	1.772045	114.067936		yes	yes	1
1770	Male	25.000000	1.774017	114.001000		---	---	1

1770	Male	25.329200	1.771817	114.004832	yes	yes	1
1771	Male	25.666680	1.798580	117.933290	yes	yes	2
1772	Male	25.012770	1.788586	117.849351	yes	yes	2
1773	Male	25.047945	1.803207	118.332966	yes	yes	1
1774	Male	25.426457	1.836592	118.377601	yes	yes	1
1775	Male	37.207082	1.762921	118.401740	yes	yes	2
1776	Male	38.108940	1.752863	119.201465	yes	yes	2
1777	Male	38.644441	1.768235	117.792268	yes	yes	2
1778	Male	38.112989	1.766888	118.134898	yes	yes	2
1779	Male	24.825393	1.603501	101.038263	yes	yes	2
1780	Male	26.624342	1.690262	103.180918	yes	yes	2
1781	Male	33.722449	1.712905	103.276087	yes	yes	2
1782	Male	32.516469	1.695735	102.784864	yes	yes	2
1783	Male	23.881938	1.829971	121.041720	yes	yes	2
1784	Male	23.319635	1.846290	121.248035	yes	yes	3
1785	Male	23.912387	1.774983	119.081804	yes	yes	2
1786	Male	24.982997	1.789680	118.436166	yes	yes	1
1787	Male	24.511445	1.852664	121.310257	yes	yes	2
1788	Male	24.053310	1.872561	121.471077	yes	yes	2
1789	Male	22.906886	1.819550	120.775439	yes	yes	2
1790	Male	23.147644	1.815514	120.337664	yes	yes	2
1791	Male	24.001889	1.614075	100.245302	yes	yes	2
1792	Male	24.002404	1.609418	100.078367	yes	yes	2
1793	Male	30.715160	1.650189	101.141277	yes	yes	2
1794	Male	30.642430	1.653876	102.583895	yes	yes	2
1795	Male	20.068432	1.657132	105.580491	yes	yes	2
1796	Male	20.914366	1.644751	101.067988	yes	yes	2
1797	Male	25.512048	1.660761	104.321463	yes	yes	2
1798	Male	26.844812	1.691510	102.595180	yes	yes	2
1799	Female	25.919241	1.611462	102.093223	yes	yes	3
1800	Female	26.000000	1.584782	105.055597	yes	yes	3

1801	Female	18.233541	1.792378	137.859737	yes	yes	3
1802	Female	18.147705	1.802257	149.935848	yes	yes	3
1803	Female	26.000000	1.656320	111.933010	yes	yes	3
1804	Female	26.000000	1.600762	105.448264	yes	yes	3
1805	Female	25.902283	1.678658	104.954834	yes	yes	3
1806	Female	25.540865	1.678201	109.900472	yes	yes	3
1807	Female	22.392510	1.655630	121.205171	yes	yes	3
1808	Female	21.305402	1.694952	133.764730	yes	yes	3
1809	Female	26.000000	1.622771	109.959714	yes	yes	3
1810	Female	26.000000	1.583889	110.545378	yes	yes	3
1811	Female	21.334585	1.729045	131.529267	yes	yes	3
1812	Female	22.978655	1.664622	114.465425	yes	yes	3
1813	Female	21.012450	1.747773	127.902844	yes	yes	3
1814	Female	21.056059	1.730113	152.094362	yes	yes	3
1815	Female	18.771001	1.746652	133.800129	yes	yes	3
1816	Female	24.265943	1.719365	114.511537	yes	yes	3
1817	Female	26.000000	1.632377	111.946655	yes	yes	3
1818	Female	26.000000	1.642572	111.868169	yes	yes	3
1819	Female	25.967010	1.654875	104.758713	yes	yes	3
1820	Female	26.000000	1.627567	107.482662	yes	yes	3
1821	Female	20.590046	1.736276	130.927138	yes	yes	3
1822	Female	24.497373	1.737056	132.527011	yes	yes	3
1823	Female	25.991886	1.580968	102.003378	yes	yes	3
1824	Female	25.908431	1.607128	103.026858	yes	yes	3
1825	Female	18.177882	1.821566	142.102468	yes	yes	3
1826	Female	18.112503	1.827730	152.720545	yes	yes	3
1827	Female	26.000000	1.656504	111.993054	yes	yes	3
1828	Female	26.000000	1.637725	111.208963	yes	yes	3
1829	Female	25.902283	1.669701	104.585783	yes	yes	3
1830	Female	25.540865	1.668709	104.754958	yes	yes	3
1831	Female	20.520992	1.668642	124.704781	yes	yes	3

<b>1832</b>	Female	20.871153	1.690614	129.769141			yes	yes 3
<b>1833</b>	Female	26.000000	1.622418	110.676343			yes	yes 3
<b>1834</b>	Female	26.000000	1.643332	110.824698			yes	yes 3
<b>1835</b>	Female	21.768834	1.733383	135.524857			yes	yes 3
<b>1836</b>	Female	20.891491	1.748313	133.573787			yes	yes 3
<b>1837</b>	Female	20.941943	1.812963	138.730619			yes	yes 3
<b>1838</b>	Female	20.989016	1.807340	155.872093			yes	yes 3
<b>1839</b>	Female	18.367481	1.745644	133.665587			yes	yes 3
<b>1840</b>	Female	21.051107	1.753266	133.852432			yes	yes 3
<b>1841</b>	Female	26.000000	1.632193	111.886611			yes	yes 3
<b>1842</b>	Female	26.000000	1.641098	111.818345			yes	yes 3
<b>1843</b>	Female	25.998646	1.640741	104.808542			yes	yes 3
<b>1844</b>	Female	26.000000	1.618573	104.928643			yes	yes 3
<b>1845</b>	Female	22.846357	1.757442	133.365094			yes	yes 3
<b>1846</b>	Female	19.885655	1.763343	133.952675			yes	yes 3
<b>1847</b>	Female	25.930376	1.610086	102.387450			yes	yes 3
<b>1848</b>	Female	25.897815	1.664463	102.781971			yes	yes 3
<b>1849</b>	Female	26.000000	1.602025	104.899348			yes	yes 3
<b>1850</b>	Female	25.968792	1.632896	104.988925			yes	yes 3
<b>1851</b>	Female	18.335019	1.771043	137.044959			yes	yes 3
<b>1852</b>	Female	21.700748	1.789555	137.767787			yes	yes 3
<b>1853</b>	Female	18.222536	1.801746	141.166265			yes	yes 3
<b>1854</b>	Female	20.375600	1.787195	151.975864			yes	yes 3
<b>1855</b>	Female	26.000000	1.644141	111.942544			yes	yes 3
<b>1856</b>	Female	26.000000	1.643355	111.600553			yes	yes 3
<b>1857</b>	Female	26.000000	1.623707	105.037463			yes	yes 3
<b>1858</b>	Female	26.000000	1.610636	105.423532			yes	yes 3
<b>1859</b>	Female	25.943827	1.629491	104.839068			yes	yes 3
<b>1860</b>	Female	25.291974	1.684768	104.821175			yes	yes 3
<b>1861</b>	Female	25.653233	1.664940	110.922170			yes	yes 3

1862	Female	25.783865	1.655646	110.217340	yes	yes	3
1863	Female	19.176140	1.666194	124.805868	yes	yes	3
1864	Female	21.207423	1.707508	121.864326	yes	yes	3
1865	Female	21.633056	1.754174	133.783955	yes	yes	3
1866	Female	21.009596	1.714193	131.866734	yes	yes	3
1867	Female	26.000000	1.624390	110.008636	yes	yes	3
1868	Female	26.000000	1.638836	110.970479	yes	yes	3
1869	Female	26.000000	1.621245	111.267334	yes	yes	3
1870	Female	25.954511	1.623514	109.980145	yes	yes	3
1871	Female	21.001969	1.736215	132.145549	yes	yes	3
1872	Female	21.772251	1.732951	132.904884	yes	yes	3
1873	Female	23.761970	1.691350	114.480696	yes	yes	3
1874	Female	24.449655	1.635062	113.277388	yes	yes	3
1875	Female	18.378203	1.746061	128.261402	yes	yes	3
1876	Female	19.725718	1.746529	129.363771	yes	yes	3
1877	Female	21.344018	1.746516	144.302261	yes	yes	3
1878	Female	21.322097	1.751118	149.291106	yes	yes	3
1879	Female	19.262934	1.741014	132.579270	yes	yes	3
1880	Female	21.566815	1.748533	133.946080	yes	yes	3
1881	Female	24.475242	1.694726	112.776612	yes	yes	3
1882	Female	25.612462	1.674515	112.879662	yes	yes	3
1883	Female	26.000000	1.631332	111.829957	yes	yes	3
1884	Female	26.000000	1.641918	111.868990	yes	yes	3
1885	Female	26.000000	1.640125	111.539494	yes	yes	3
1886	Female	26.000000	1.649178	111.914361	yes	yes	3
1887	Female	25.967730	1.603404	105.031908	yes	yes	3
1888	Female	25.989938	1.644199	105.036075	yes	yes	3
1889	Female	26.000000	1.628909	106.875927	yes	yes	3
1890	Female	25.617227	1.628019	108.265922	yes	yes	3
1891	Female	21.030909	1.718180	133.466763	yes	yes	3
1892	Female	20.951084	1.708581	131.274851	yes	yes	3

1893	Female	22.980221	1.724983	132.940660	yes	yes	3
1894	Female	23.426036	1.739991	133.485478	yes	yes	3
1895	Female	25.999185	1.568543	102.000122	yes	yes	3
1896	Female	25.934757	1.579893	102.134646	yes	yes	3
1897	Female	20.327723	1.782714	154.618446	yes	yes	3
1898	Female	19.472190	1.793824	160.935351	yes	yes	3
1899	Female	26.000000	1.659557	111.999096	yes	yes	3
1900	Female	26.000000	1.657820	111.956110	yes	yes	3
1901	Female	25.816445	1.684082	104.592372	yes	yes	3
1902	Female	25.498965	1.683950	104.846817	yes	yes	3
1903	Female	19.137495	1.716521	127.642324	yes	yes	3
1904	Female	20.190733	1.680762	125.418548	yes	yes	3
1905	Female	26.000000	1.623303	110.817460	yes	yes	3
1906	Female	26.000000	1.631856	110.804337	yes	yes	3
1907	Female	21.840654	1.747479	136.516648	yes	yes	3
1908	Female	20.871667	1.782453	137.852618	yes	yes	3
1909	Female	21.501721	1.809871	152.394739	yes	yes	3
1910	Female	21.521294	1.803677	160.639405	yes	yes	3
1911	Female	18.314593	1.745602	133.554686	yes	yes	3
1912	Female	19.529746	1.751038	133.843033	yes	yes	3
1913	Female	26.000000	1.631547	111.588625	yes	yes	3
1914	Female	26.000000	1.635905	111.571076	yes	yes	3
1915	Female	26.000000	1.616975	104.846218	yes	yes	3
1916	Female	26.000000	1.627880	104.920570	yes	yes	3
1917	Female	21.768153	1.764160	133.888629	yes	yes	3
1918	Female	21.238416	1.763847	133.937873	yes	yes	3
1919	Female	25.930376	1.608808	102.083964	yes	yes	3
1920	Female	25.919571	1.610488	102.174953	yes	yes	3
1921	Female	25.918524	1.621231	104.986792	yes	yes	3
1922	Female	25.565662	1.642392	104.988082	yes	yes	3
1923	Female	19.744044	1.804080	129.024526	yes	yes	3

1923	Female	10.744914	1.001983	150.004520		yes	yes	3
1924	Female	21.704699	1.787614	137.858254		yes	yes	3
1925	Female	20.089969	1.801478	151.417292		yes	yes	3
1926	Female	18.120739	1.807576	152.567671		yes	yes	3
1927	Female	26.000000	1.650125	111.939671		yes	yes	3
1928	Female	26.000000	1.652674	111.919155		yes	yes	3
1929	Female	25.986185	1.663632	105.122109		yes	yes	3
1930	Female	25.982113	1.627818	105.428628		yes	yes	3
1931	Female	25.748627	1.668770	104.774144		yes	yes	3
1932	Female	25.959772	1.642098	104.966758		yes	yes	3
1933	Female	25.653233	1.657570	109.931233		yes	yes	3
1934	Female	25.783865	1.643111	109.910012		yes	yes	3
1935	Female	21.412434	1.675562	121.639178		yes	yes	3
1936	Female	22.777890	1.661415	120.748213		yes	yes	3
1937	Female	21.140165	1.713133	133.735889		yes	yes	3
1938	Female	21.413498	1.719900	133.886031		yes	yes	3
1939	Female	26.000000	1.622701	109.982692		yes	yes	3
1940	Female	26.000000	1.622468	110.400847		yes	yes	3
1941	Female	26.000000	1.618867	110.777391		yes	yes	3
1942	Female	26.000000	1.600905	110.074946		yes	yes	3
1943	Female	21.391371	1.730636	131.902591		yes	yes	3
1944	Female	21.051982	1.729719	131.877558		yes	yes	3
1945	Female	23.455303	1.677672	114.470482		yes	yes	3
1946	Female	23.694840	1.637524	113.905060		yes	yes	3
1947	Female	20.601222	1.738717	128.114161		yes	yes	3
1948	Female	20.811580	1.741193	128.763843		yes	yes	3
1949	Female	19.993565	1.792833	152.435630		yes	yes	3
1950	Female	20.074449	1.810427	152.217135		yes	yes	3
1951	Female	18.904037	1.743589	133.281333		yes	yes	3
1952	Female	19.783234	1.747962	133.936535		yes	yes	3
1953	Female	24.291205	1.711460	113.372851		yes	yes	3

1954	Female	25.311534	1.685482	113.451224	yes	yes	3
1955	Female	26.000000	1.639251	111.927001	yes	yes	3
1956	Female	26.000000	1.654784	111.933152	yes	yes	3
1957	Female	26.000000	1.641209	111.856492	yes	yes	3
1958	Female	26.000000	1.643167	111.894229	yes	yes	3
1959	Female	25.966504	1.630730	104.790549	yes	yes	3
1960	Female	25.950898	1.649867	104.791035	yes	yes	3
1961	Female	26.000000	1.613574	107.012256	yes	yes	3
1962	Female	26.000000	1.627532	106.690530	yes	yes	3
1963	Female	20.848608	1.726606	131.768070	yes	yes	3
1964	Female	20.801791	1.721476	131.042274	yes	yes	3
1965	Female	23.712641	1.742901	132.807100	yes	yes	3
1966	Female	24.063874	1.737313	133.166595	yes	yes	3
1967	Female	25.957740	1.624140	102.233445	yes	yes	3
1968	Female	25.909353	1.644078	102.277765	yes	yes	3
1969	Female	25.954995	1.592529	102.874549	yes	yes	3
1970	Female	25.908829	1.607734	102.305767	yes	yes	3
1971	Female	19.297004	1.817271	141.917802	yes	yes	3
1972	Female	18.301773	1.808765	140.292018	yes	yes	3
1973	Female	19.872667	1.817231	152.371911	yes	yes	3
1974	Female	18.137820	1.819728	151.278532	yes	yes	3
1975	Female	26.000000	1.656465	111.949972	yes	yes	3
1976	Female	26.000000	1.648143	111.950113	yes	yes	3
1977	Female	26.000000	1.622703	111.216192	yes	yes	3
1978	Female	26.000000	1.640606	111.036881	yes	yes	3
1979	Female	25.427240	1.683502	104.759643	yes	yes	3
1980	Female	25.795187	1.669039	104.593929	yes	yes	3
1981	Female	25.493586	1.673665	104.704707	yes	yes	3
1982	Female	25.524336	1.668931	104.768318	yes	yes	3
1983	Female	20.908785	1.700996	126.490236	yes	yes	3
1984	Female	20.781751	1.734092	125.117633	yes	yes	3

<b>1985</b>	Female	21.289104	1.708291	130.986338		yes	yes	3
<b>1986</b>	Female	21.210732	1.716497	130.871127		yes	yes	3
<b>1987</b>	Female	26.000000	1.624950	111.004920		yes	yes	3
<b>1988</b>	Female	26.000000	1.594776	110.640929		yes	yes	3
<b>1989</b>	Female	26.000000	1.626503	110.818757		yes	yes	3
<b>1990</b>	Female	26.000000	1.624576	110.803117		yes	yes	3
<b>1991</b>	Female	21.656907	1.729099	134.842656		yes	yes	3
<b>1992</b>	Female	21.760734	1.735810	135.346677		yes	yes	3
<b>1993</b>	Female	21.028989	1.748524	133.878843		yes	yes	3
<b>1994</b>	Female	21.282238	1.748951	133.662583		yes	yes	3
<b>1995</b>	Female	20.388049	1.777971	137.785027		yes	yes	3
<b>1996</b>	Female	21.022206	1.739950	135.693381		yes	yes	3
<b>1997</b>	Female	20.102241	1.816868	153.959945		yes	yes	3
<b>1998</b>	Female	21.291969	1.800200	155.242672		yes	yes	3
<b>1999</b>	Female	20.530998	1.746470	133.644711		yes	yes	3
<b>2000</b>	Female	18.976968	1.759091	133.903612		yes	yes	3
<b>2001</b>	Female	20.924956	1.752531	133.618706		yes	yes	3
<b>2002</b>	Female	21.282530	1.761773	133.903469		yes	yes	3
<b>2003</b>	Female	26.000000	1.633195	111.883747		yes	yes	3
<b>2004</b>	Female	26.000000	1.633945	111.930700		yes	yes	3
<b>2005</b>	Female	26.000000	1.641601	111.830924		yes	yes	3
<b>2006</b>	Female	26.000000	1.641132	111.841706		yes	yes	3
<b>2007</b>	Female	25.999174	1.638218	104.810024		yes	yes	3
<b>2008</b>	Female	25.999942	1.627483	104.881994		yes	yes	3
<b>2009</b>	Female	26.000000	1.610225	104.936381		yes	yes	3
<b>2010</b>	Female	26.000000	1.617390	105.013901		yes	yes	3
<b>2011</b>	Female	23.365041	1.744319	133.452490		yes	yes	3
<b>2012</b>	Female	23.421726	1.755467	133.478611		yes	yes	3
<b>2013</b>	Female	18.826782	1.746416	133.747012		yes	yes	3
<b>2014</b>	Female	18.940930	1.746411	133.676663		yes	yes	3

<b>2015</b>	Female	25.921678	1.611452	102.363149	yes	yes	3
<b>2016</b>	Female	25.940153	1.596813	102.320437	yes	yes	3
<b>2017</b>	Female	25.999636	1.610126	102.686908	yes	yes	3
<b>2018</b>	Female	25.907833	1.623113	102.555691	yes	yes	3
<b>2019</b>	Female	25.991194	1.618348	104.945820	yes	yes	3
<b>2020</b>	Female	25.993154	1.609401	104.854928	yes	yes	3
<b>2021</b>	Female	25.988668	1.621671	105.313967	yes	yes	3
<b>2022</b>	Female	25.976209	1.614484	104.999403	yes	yes	3
<b>2023</b>	Female	18.743587	1.789143	138.202869	yes	yes	3
<b>2024</b>	Female	20.323767	1.774207	138.143162	yes	yes	3
<b>2025</b>	Female	21.394047	1.792933	137.832414	yes	yes	3
<b>2026</b>	Female	21.838323	1.758959	137.792990	yes	yes	3
<b>2027</b>	Female	18.206340	1.807406	141.799429	yes	yes	3
<b>2028</b>	Female	18.532826	1.750910	142.545183	yes	yes	3
<b>2029</b>	Female	20.438478	1.805803	153.149491	yes	yes	3
<b>2030</b>	Female	20.796266	1.796538	152.473675	yes	yes	3
<b>2031</b>	Female	26.000000	1.634894	111.946321	yes	yes	3
<b>2032</b>	Female	26.000000	1.639524	111.945588	yes	yes	3
<b>2033</b>	Female	26.000000	1.643017	111.720238	yes	yes	3
<b>2034</b>	Female	26.000000	1.641849	111.682693	yes	yes	3
<b>2035</b>	Female	26.000000	1.621167	104.947703	yes	yes	3
<b>2036</b>	Female	25.992898	1.638075	105.036522	yes	yes	3
<b>2037</b>	Female	26.000000	1.609370	105.407313	yes	yes	3
<b>2038</b>	Female	26.000000	1.608283	105.359688	yes	yes	3
<b>2039</b>	Female	25.951737	1.629442	104.835346	yes	yes	3
<b>2040</b>	Female	25.982261	1.629225	104.838425	yes	yes	3
<b>2041</b>	Female	25.470652	1.680218	104.807284	yes	yes	3
<b>2042</b>	Female	25.289428	1.686033	104.772164	yes	yes	3
<b>2043</b>	Female	25.696073	1.662978	110.930509	yes	yes	3
<b>2044</b>	Female	25.561868	1.675185	110.621723	yes	yes	3
<b>2045</b>	Female	25.834018	1.624560	110.105890	yes	yes	3

<b>2046</b>	Female	25.895546	1.626179	110.074019		yes	yes	3
<b>2047</b>	Female	19.035557	1.682594	127.427458		yes	yes	3
<b>2048</b>	Female	18.634286	1.669354	126.088301		yes	yes	3
<b>2049</b>	Female	20.700876	1.688380	121.889803		yes	yes	3
<b>2050</b>	Female	20.741442	1.694439	122.813033		yes	yes	3
<b>2051</b>	Female	21.695892	1.755476	133.870501		yes	yes	3
<b>2052</b>	Female	21.635977	1.748106	133.259033		yes	yes	3
<b>2053</b>	Female	21.232659	1.719913	131.567481		yes	yes	3
<b>2054</b>	Female	21.008297	1.723587	131.929712		yes	yes	3
<b>2055</b>	Female	25.962949	1.623812	109.996742		yes	yes	3
<b>2056</b>	Female	26.000000	1.624099	109.978402		yes	yes	3
<b>2057</b>	Female	26.000000	1.632983	111.157811		yes	yes	3
<b>2058</b>	Female	26.000000	1.640745	110.919646		yes	yes	3
<b>2059</b>	Female	26.000000	1.629727	111.275646		yes	yes	3
<b>2060</b>	Female	26.000000	1.624134	111.531208		yes	yes	3
<b>2061</b>	Female	25.964788	1.623938	109.984263		yes	yes	3
<b>2062</b>	Female	25.994949	1.593321	110.168166		yes	yes	3
<b>2063</b>	Female	20.952737	1.730333	132.116491		yes	yes	3
<b>2064</b>	Female	20.978166	1.721057	132.054793		yes	yes	3
<b>2065</b>	Female	21.674470	1.719780	132.262558		yes	yes	3
<b>2066</b>	Female	21.568951	1.699315	133.107610		yes	yes	3
<b>2067</b>	Female	23.647935	1.681394	114.479459		yes	yes	3
<b>2068</b>	Female	24.196367	1.697421	114.482386		yes	yes	3
<b>2069</b>	Female	24.284833	1.650726	113.774198		yes	yes	3
<b>2070</b>	Female	24.693108	1.667383	112.982549		yes	yes	3
<b>2071</b>	Female	18.862264	1.746277	128.705761		yes	yes	3
<b>2072</b>	Female	18.423482	1.735461	126.798173		yes	yes	3
<b>2073</b>	Female	20.394082	1.747714	128.148108		yes	yes	3
<b>2074</b>	Female	20.217015	1.715820	129.466541		yes	yes	3
<b>2075</b>	Female	21.330178	1.747987	147.296186		yes	yes	3
<b>2076</b>	Female	10.529026	1.017017	142.550161		yes	yes	3

2070	Female	19.520930	1.817917	142.059101		yes	yes	3
2077	Female	19.364339	1.808350	150.516480		yes	yes	3
2078	Female	21.131526	1.739457	150.377570		yes	yes	3
2079	Female	19.012872	1.742062	133.779919		yes	yes	3
2080	Female	18.469086	1.741925	133.017105		yes	yes	3
2081	Female	21.572114	1.751067	133.845064		yes	yes	3
2082	Female	21.680123	1.749118	133.955091		yes	yes	3
2083	Female	24.469756	1.663341	113.077187		yes	yes	3
2084	Female	25.127910	1.668537	112.555456		yes	yes	3
2085	Female	25.986368	1.668951	112.249699		yes	yes	3
2086	Female	25.951979	1.661712	112.098616		yes	yes	3
2087	Female	26.000000	1.633442	111.821817		yes	yes	3
2088	Female	26.000000	1.633020	111.863186		yes	yes	3
2089	Female	26.000000	1.633887	111.878132		yes	yes	3
2090	Female	26.000000	1.643421	111.939983		yes	yes	3
2091	Female	26.000000	1.640535	111.555967		yes	yes	3
2092	Female	26.000000	1.626483	111.357062		yes	yes	3
2093	Female	26.000000	1.645990	111.922491		yes	yes	3
2094	Female	26.000000	1.643892	111.884535		yes	yes	3
2095	Female	25.977310	1.617817	104.950776		yes	yes	3
2096	Female	25.955014	1.626449	104.879602		yes	yes	3
2097	Female	25.996716	1.626580	105.037203		yes	yes	3
2098	Female	25.992348	1.606474	104.954291		yes	yes	3
2099	Female	25.974446	1.628855	108.090006		yes	yes	3
2100	Female	25.777565	1.628205	107.378702		yes	yes	3
2101	Female	25.722004	1.628470	107.218949		yes	yes	3
2102	Female	25.765628	1.627839	108.107360		yes	yes	3
2103	Female	21.016849	1.724268	133.033523		yes	yes	3
2104	Female	21.682367	1.732383	133.043941		yes	yes	3
2105	Female	21.285965	1.726920	131.335786		yes	yes	3
2106	Female	20.976842	1.710730	131.408528		yes	yes	3

<b>2107</b>	Female	21.982942	1.748584	133.742943	yes	yes	3
<b>2108</b>	Female	22.524036	1.752206	133.689352	yes	yes	3
<b>2109</b>	Female	24.361936	1.739450	133.346641	yes	yes	3
<b>2110</b>	Female	23.664709	1.738836	133.472641	yes	yes	3

Pasos siguientes:

[Generar código con df\\_obesidad](#) [Ver gráficos recomendados](#)

df\_obesidad.head()

	Gender	Age	Height	Weight	family_history_with_overweight	FAVC	FCVC	NCP	F	
<b>0</b>	Female	21.0	1.62	64.0		yes	no	2.0	3.0	Som
<b>1</b>	Female	21.0	1.52	56.0		yes	no	3.0	3.0	Som
<b>2</b>	Male	23.0	1.80	77.0		yes	no	2.0	3.0	Som
<b>3</b>	Male	27.0	1.80	87.0		no	no	3.0	3.0	Som
<b>4</b>	Male	22.0	1.78	89.8		no	no	2.0	1.0	Som

Pasos siguientes:

[Generar código con df\\_obesidad](#) [Ver gráficos recomendados](#)

df\_obesidad.tail()

	Gender	Age	Height	Weight	family_history_with_overweight	FAVC	FCVC	NCP	F
<b>2106</b>	Female	20.976842	1.710730	131.408528		yes	yes	3	
<b>2107</b>	Female	21.982942	1.748584	133.742943		yes	yes	3	
<b>2108</b>	Female	22.524036	1.752206	133.689352		yes	yes	3	
<b>2109</b>	Female	24.361936	1.739450	133.346641		yes	yes	3	
<b>2110</b>	Female	23.664709	1.738836	133.472641		yes	yes	3	

## ▼ 5. Análisis Exploratorio de Datos

```
# Visualizar info del DataFrame df_mobile_market
df_obesidad.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 2111 entries, 0 to 2110
Data columns (total 17 columns):
 #   Column          Non-Null Count  Dtype  
 ---  -- 
 0   age             2111 non-null    int64  
 1   gender          2111 non-null    object 
 2   height          2111 non-null    float64
 3   weight           0 non-null     float64
 4   family_history  2111 non-null    object 
 5   FAVC            2111 non-null    object 
 6   FCVC            2111 non-null    object 
 7   NCP             2111 non-null    object 
 8   ...              ...            ...    
 9   ...              ...            ...    
 10  ...              ...            ...    
 11  ...              ...            ...    
 12  ...              ...            ...    
 13  ...              ...            ...    
 14  ...              ...            ...    
 15  ...              ...            ...    
 16  ...              ...            ...    
 17  ...              ...            ...
```

```
0   Gender                      2111 non-null  object
1   Age                         2111 non-null  float64
2   Height                      2111 non-null  float64
3   Weight                      2111 non-null  float64
4   family_history_with_overweight  2111 non-null  object
5   FAVC                        2111 non-null  object
6   FCVC                        2111 non-null  float64
7   NCP                          2111 non-null  float64
8   CAEC                        2111 non-null  object
9   SMOKE                       2111 non-null  object
10  CH20                        2111 non-null  float64
11  SCC                          2111 non-null  object
12  FAF                          2111 non-null  float64
13  TUE                          2111 non-null  float64
14  CALC                         2111 non-null  object
15  MTRANS                       2111 non-null  object
16  NObeyesdad                  2111 non-null  object
dtypes: float64(8), object(9)
memory usage: 280.5+ KB
```

```
#Tipo de datos  
df_obesidad.dtypes
```

```
Gender                      object
Age                         float64
Height                      float64
Weight                      float64
family_history_with_overweight  object
FAVC                        object
FCVC                        float64
NCP                          float64
CAEC                        object
SMOKE                       object
CH20                        float64
SCC                          object
FAF                          float64
TUE                          float64
CALC                         object
MTRANS                       object
NObeyesdad                  object
dtype: object
```

```
# Acceder al número de filas y columnas por separado  
print("Número de filas:", df_obesidad.shape[0])  
print("Número de columnas:", df_obesidad.shape[1])
```

```
Número de filas: 2111  
Número de columnas: 17
```

```
# Revisar valores vacíos  
df_obesidad.isnull().sum()
```

Gender	0
Age	0

```
Height          0
Weight          0
family_history_with_overweight 0
FAVC            0
FCVC            0
NCP             0
CAEC            0
SMOKE           0
CH20            0
SCC              0
FAF              0
TUE              0
CALC             0
MTRANS           0
NObeyesdad      0
dtype: int64
```

```
# Revisar valores duplicados
df_obesidad.duplicated()
```

```
0     False
1     False
2     False
3     False
4     False
5     False
6     False
7     False
8     False
9     False
10    False
11    False
12    False
13    False
14    False
15    False
16    False
17    False
18    False
19    False
20    False
21    False
22    False
23    False
24    False
25    False
26    False
27    False
28    False
29    False
30    False
31    False
32    False
33    False
34    False
```

```
34      False
35      False
36      False
37      False
38      False
39      False
40      False
41      False
42      False
43      False
44      False
45      False
46      False
47      False
48      False
49      False
50      False
51      False
52      False
53      False
54      False
55      False
56      False
57      False
```

```
df_obesidad.duplicated().sum()
```

```
24
```

```
#Revisar cuantos valores unicos hay
df_obesidad.nunique()
```

```
Gender                  2
Age                    1402
Height                 1574
Weight                 1525
family_history_with_overweight  2
FAVC                   2
FCVC                   810
NCP                    635
CAEC                   4
SMOKE                  2
CH20                  1268
SCC                    2
FAF                    1190
TUE                    1129
CALC                   4
MTRANS                  5
NObeyesdad                7
dtype: int64
```

```
#Visualizar las descripciones estadisticas de las variables numericas
df_obesidad.describe()
```

Age	Weight	Height	FCVC	NCP	CH20
-----	--------	--------	------	-----	------

	age	height	weight	level	ncvr	ncvr	caec
<b>count</b>	2111.000000	2111.000000	2111.000000	2111.000000	2111.000000	2111.000000	2111.
<b>mean</b>	24.312600	1.701677	86.586058	2.419043	2.685628	2.008011	1.
<b>std</b>	6.345968	0.093305	26.191172	0.533927	0.778039	0.612953	0.
<b>min</b>	14.000000	1.450000	39.000000	1.000000	1.000000	1.000000	0.
<b>25%</b>	19.947192	1.630000	65.473343	2.000000	2.658738	1.584812	0.
<b>50%</b>	22.777890	1.700499	83.000000	2.385502	3.000000	2.000000	1.
<b>75%</b>	26.000000	1.768464	107.430682	3.000000	3.000000	2.477420	1.
<b>max</b>	61.000000	1.980000	173.000000	3.000000	4.000000	3.000000	3.

#Visualizar las descripciones estadísticas de las variables categoricas  
df\_obesidad.describe(include=['object'])

	Gender	family_history_with_overweight	FAVC	CAEC	SMOKE	SCC	CA
<b>count</b>	2111		2111	2111	2111	2111	2111
<b>unique</b>	2		2	2	4	2	2
<b>top</b>	Male		yes	yes	Sometimes	no	no
<b>freq</b>	1068		1726	1866	1765	2067	2015

Debemos tener en cuenta que los datos que me proporciona describe() para las variables categóricas cambian un poco:

- **count:** El número total de valores no nulos en la columna.
- **unique:** El número de valores únicos en la columna.
- **top:** El valor más frecuente en la columna.
- **freq:** La frecuencia del valor más común en la columna.

### Comentarios:

- El Dataframe posee 2111 registros.
- Si analizamos el promedio de edad es de 24 años.
- El promedio de estatura y peso es de 1.70 m y 86.58 kg respectivamente.
- El máximo peso registrado es de 173 kg.
- No tiene registros vacíos o nulos.
- Tiene 24 datos duplicados, lo cual es el normal teniendo en cuenta que puede haber la posibilidad de que algunas personas tengan similitudes en su peso, edad, altura, entre otros datos.

- El valor mas frecuente en el dataset en la columna de género es Male("hombre").
- En la columna del SMOKE ("si fuma o no"), la respuesta mas frecuente fue "no".

## ▼ 6. Visualización de datos

A continuación, se muestra como esta dividida mi población de estudio en cuanto al genero y se puede ver que es muy parejo el numero de Hombres como de mujeres en mi dataset.

```
contador_genero = df_obesidad['Gender'].value_counts()

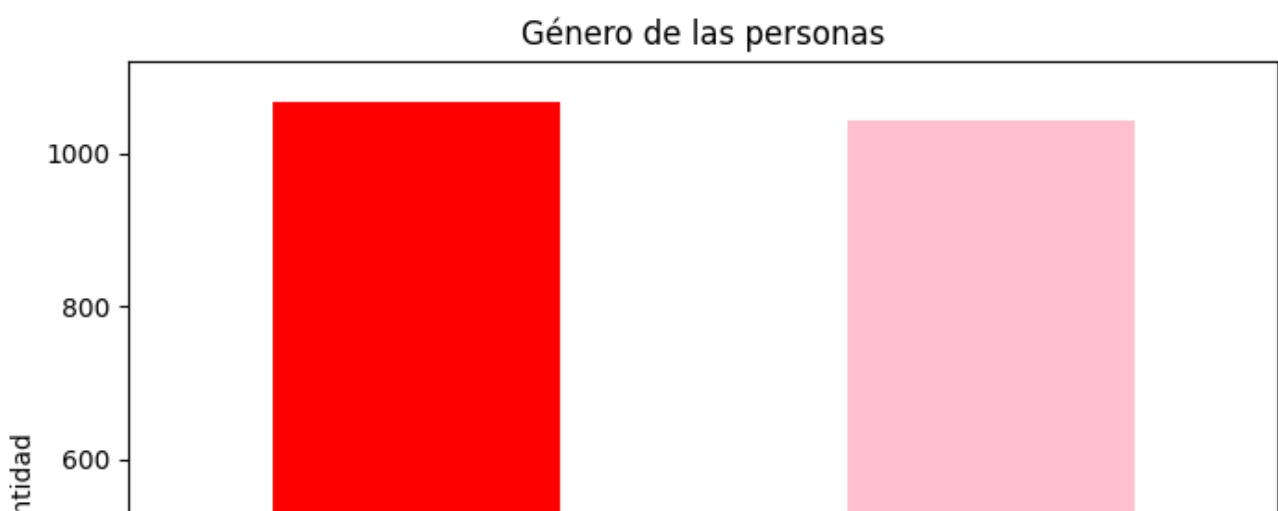
plt.figure(figsize=(8, 6))
contador_genero.plot(kind='bar', color=['red', 'pink'])
plt.xlabel('Género')
plt.ylabel('Cantidad')
plt.title('Género de las personas')
plt.xticks(rotation=0) # Rotar las etiquetas del eje x
plt.show()

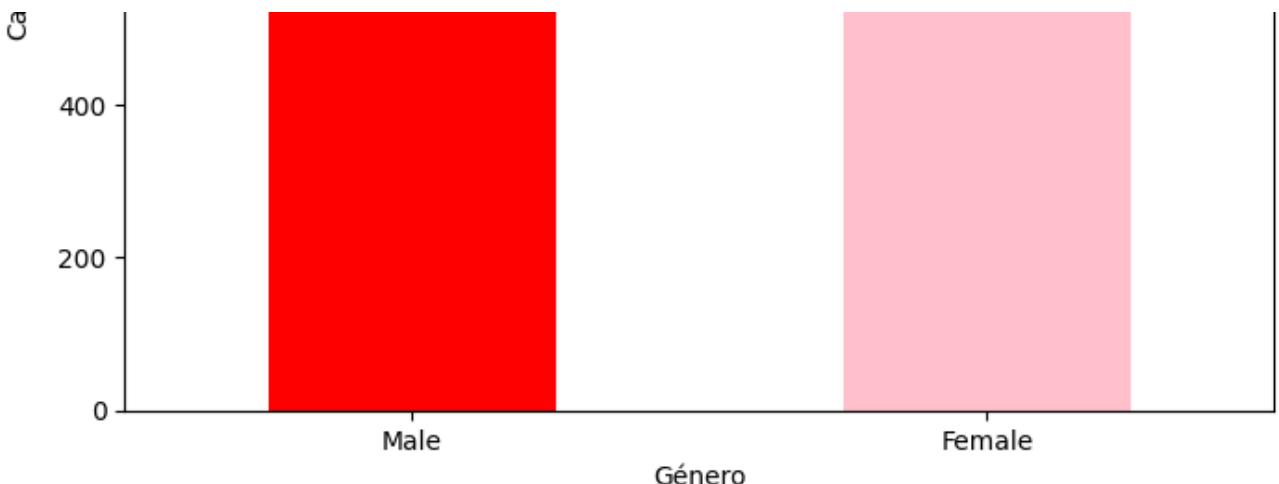
generos = contador_genero.index.tolist()
cantidades = contador_genero.values.tolist()

for i in range(len(generos)):

    if generos[i] == 'Female':
        genero_imprimir = 'Femenino'
    elif generos[i] == 'Male':
        genero_imprimir = 'Masculino'
    else:
        genero_imprimir = generos[i]

    print(f"Hay {cantidades[i]} personas de género {genero_imprimir}.")
```



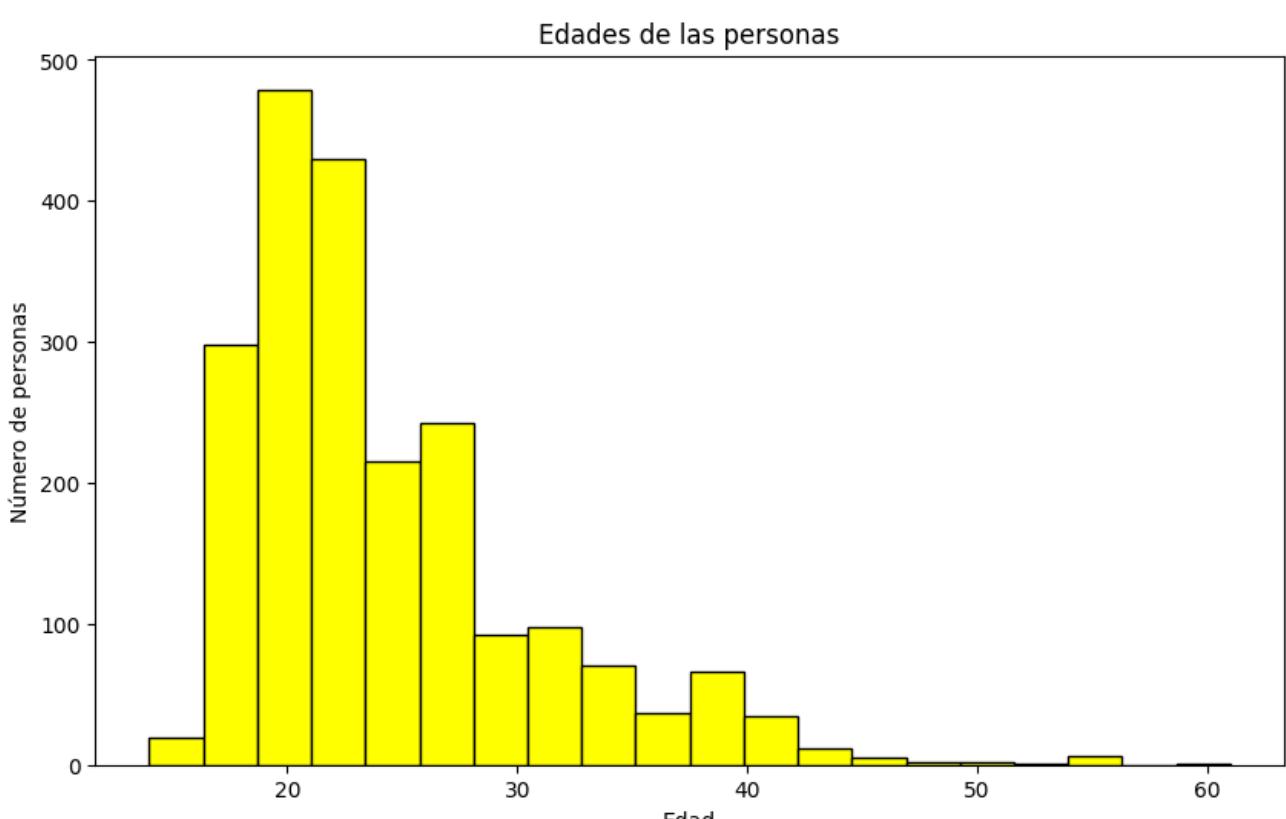


Hay 1068 personas de género Masculino.

Hay 1043 personas de género Femenino.

## Veamos ahora la distribucion de las edades

```
# Crear el histograma de edades
plt.figure(figsize=(10, 6))
plt.hist(df_obesidad['Age'], bins=20, color='yellow', edgecolor='black')
plt.xlabel('Edad')
plt.ylabel('Número de personas')
plt.title('Edades de las personas')
plt.show()
```

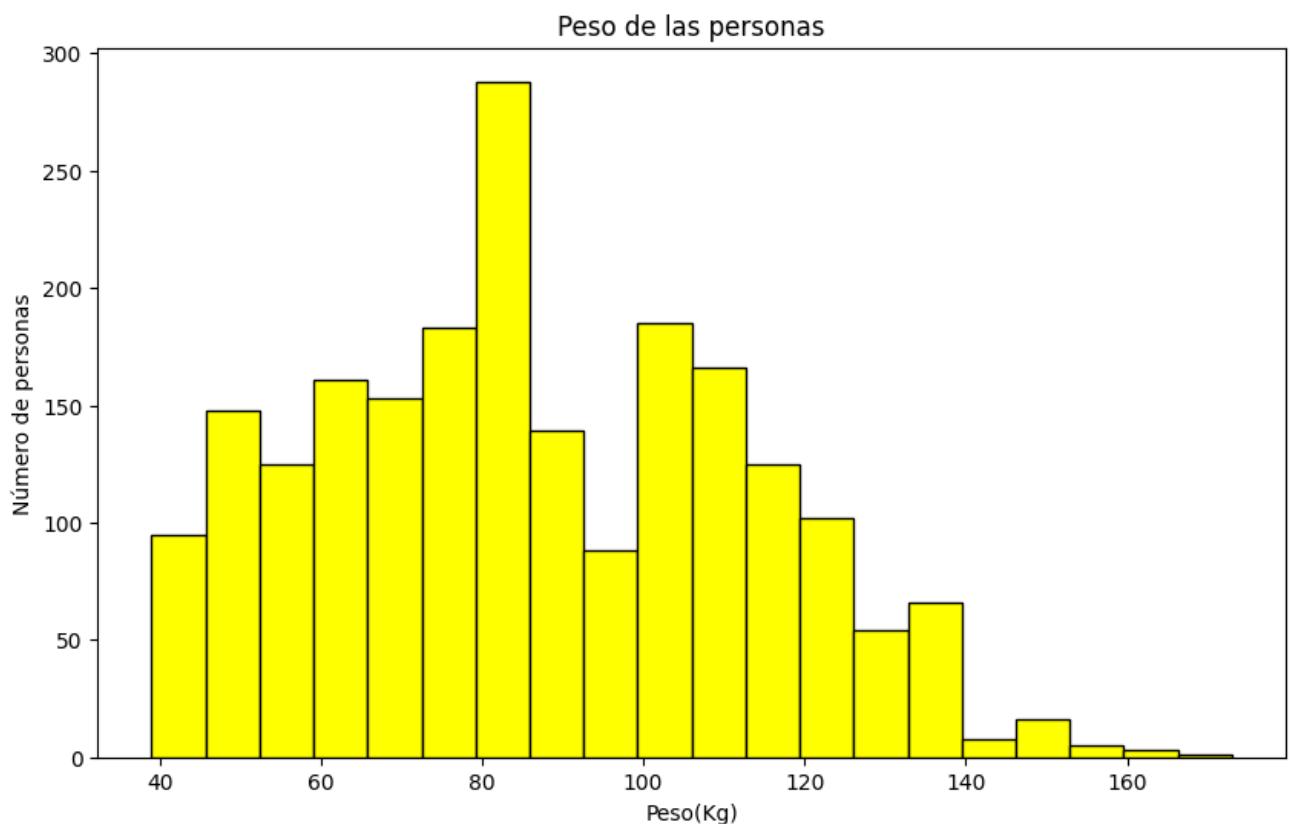


Luisa

Nuestro dataset muestra una fuerte presencia de personas con edades comprendidas entre los 20 a los 23 años.

## Distribución del peso

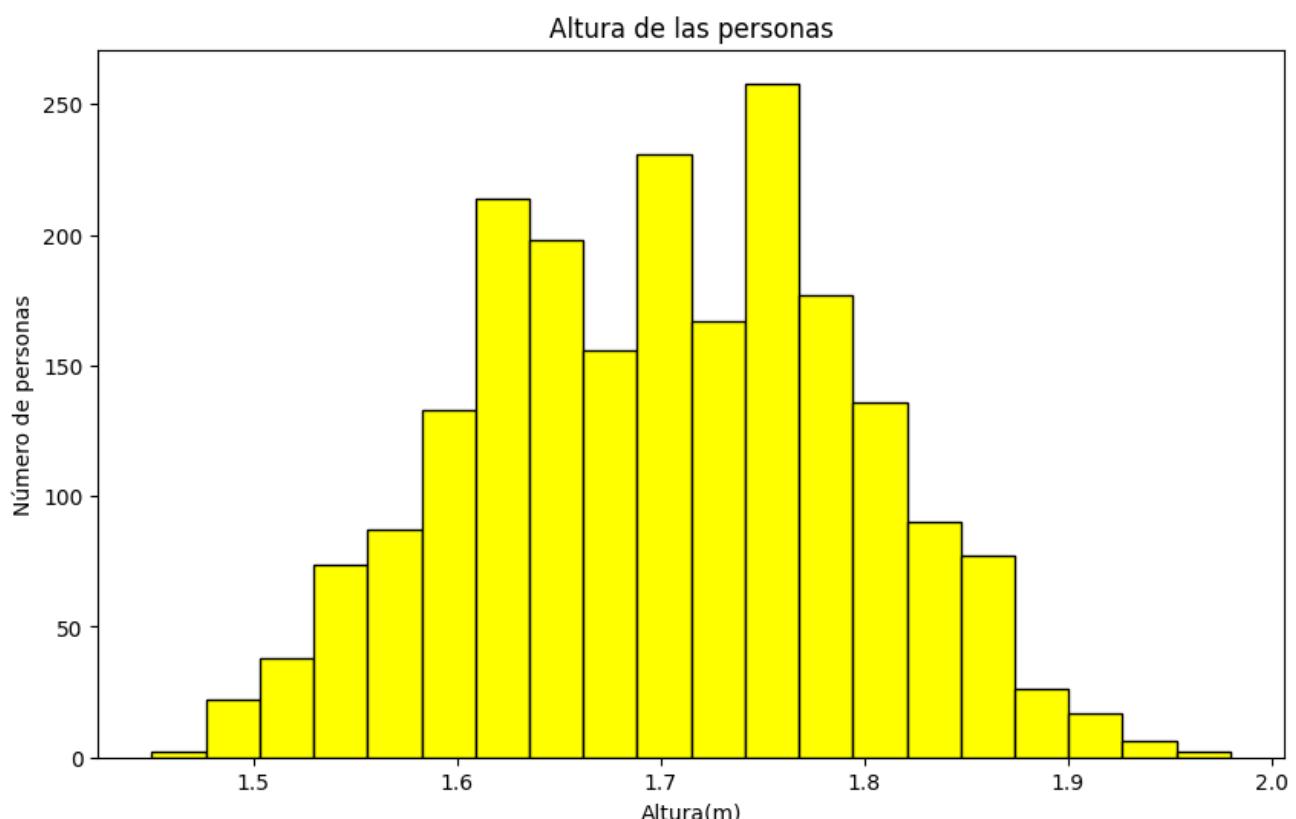
```
# Crear el histograma de pesos
plt.figure(figsize=(10, 6))
plt.hist(df_obesidad['Weight'], bins=20, color='yellow', edgecolor='black')
plt.xlabel('Peso(Kg)')
plt.ylabel('Número de personas')
plt.title('Peso de las personas')
plt.show()
```



Se muestra que el promedio de personas con peso de 80 kg es bastante fuerte.

## Distribucion del peso

```
plt.figure(figsize=(10, 6))
plt.hist(df_obesidad['Height'], bins=20, color='yellow', edgecolor='black')
plt.xlabel('Altura(m)')
plt.ylabel('Número de personas')
plt.title('Altura de las personas')
plt.show()
```

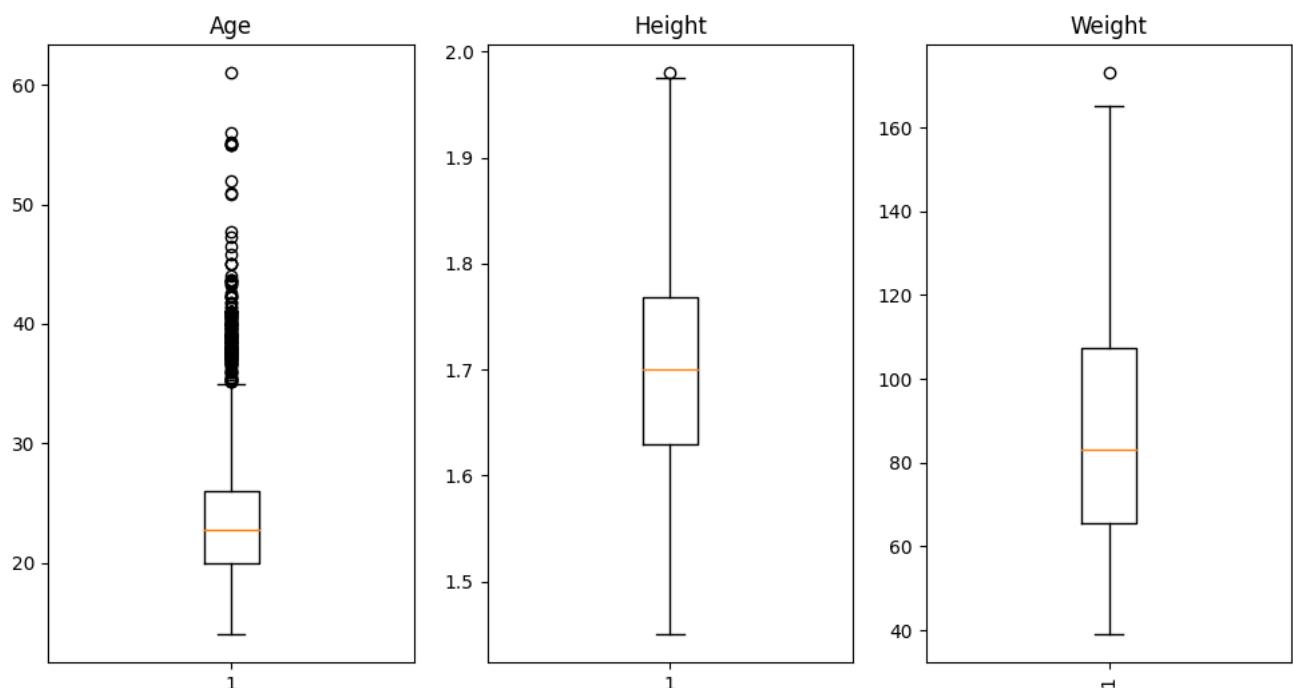


Alta presencia de personas con estatura media de 1.78 m en este dataset.

## Diagrama de caja para la Edad, Altura y Peso

```
fig, axs = plt.subplots(1, 3, figsize=(12, 6))
pos = 0

for column in ['Age', 'Height', 'Weight']:
    axs[pos].boxplot(df_obesidad[column])
    axs[pos].set_title(f'{column}')
    plt.xticks(rotation = 90)
    pos += 1
plt.show()
```



### Comentarios:

- Para la edad tenemos que la caja que es quien representa el 50% de los datos se ubica entre 20 años y 27 años, esto quiere decir que son los datos más predominantes de mi dataset para esta variable, además observamos por la linea horizontal que es la mediana el dato más predominante es 24 años y los puntos en los extremos son valores atípicos o simplemente que no tiene una frecuencia de repetición muy alta esta la edad de los 60 años.
- En la altura nuestra caja se sitúa en el rango de 1,63 m a 1,77 m que representa el 50% de

los datos de nuestro dataset, la linea horizontal que representa la media esta en la altura de 1,70 m lo que quiere decir que hay muchas personas que tienen esta altura en mi dataset y como valores atípicos por mis extremos tenemos a 1,97 m como el valor menos repetido del dataset.

- Tenemos que el peso situa la caja en el rango de 68kg a 107 kg como el 50% de los datos que mas se repiten en mi dataset, la media de este se situa en 83 kg y como valores atípicos tenemos numeros que van mas alla de 170 kg lo cual es alarmante.

## Comparación del peso y la altura para los géneros masculino y femenino

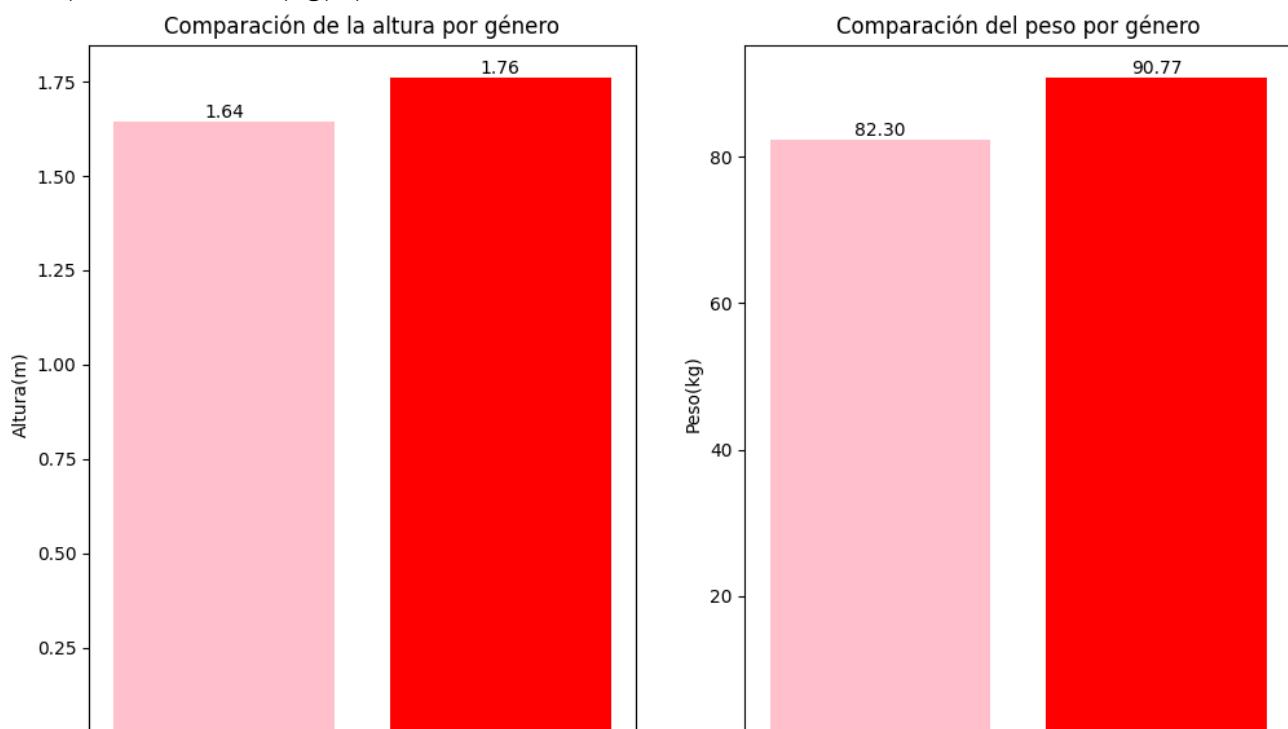
```
gender_height = df_obesidad.groupby('Gender')['Height'].mean()
gender_weight = df_obesidad.groupby('Gender')['Weight'].mean()

fig, ax = plt.subplots(1, 2, figsize=(12,7))

bar0 = ax[0].bar(x= gender_height.index, height = gender_height, color = ['pink', 'red'])
ax[0].bar_label(bar0, fmt='%.2f')
ax[0].set_title('Comparación de la altura por género')
ax[0].set_xlabel('Género')
ax[0].set_ylabel('Altura(m)')

bar1 = ax[1].bar(x= gender_weight.index, height = gender_weight, color = ['pink', 'red'])
ax[1].bar_label(bar1, fmt='%.2f')
ax[1].set_title('Comparación del peso por género')
ax[1].set_xlabel('Género')
ax[1].set_ylabel('Peso(kg)')

Text(0, 0.5, 'Peso(kg)')
```





- Para el primer gráfico tenemos que la media de altura para las mujeres es de 1.64m y para los hombres es de 1,76m.
- Para el segundo gráfico, que nos muestra el peso, las mujeres tienen una media de 82.30 kg y para los hombres de 90.77 kg.

### Personas con historial familiar con obesidad

```
family_history_percentage = df_obesidad['family_history_with_overweight'].value_counts(normalize=True)  
plt.figure(figsize=(8, 6))  
family_history_percentage.plot(kind='bar', color=['red', 'green'])  
plt.xlabel('Personas con Historial Familiar de Obesidad')  
plt.ylabel('Porcentaje de personas')  
plt.title('Historial familiar de obesidad en términos de porcentaje')  
plt.xticks(rotation=0) # Rotar las etiquetas del eje x  
plt.ylim(0, 100) # Establecer el límite del eje y de 0 a 100  
plt.show()
```



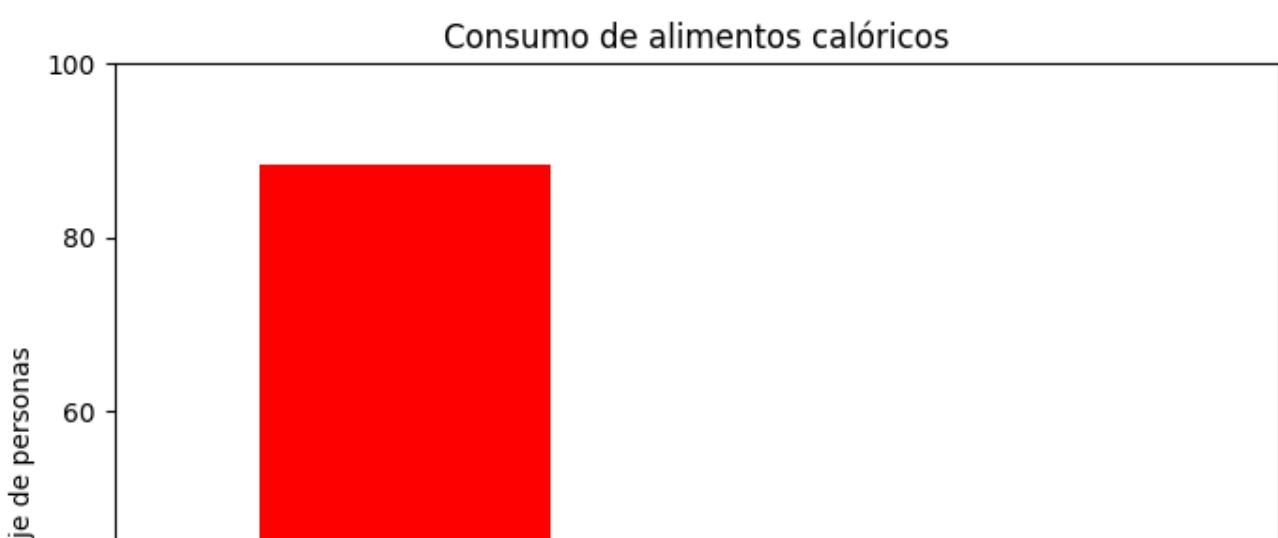


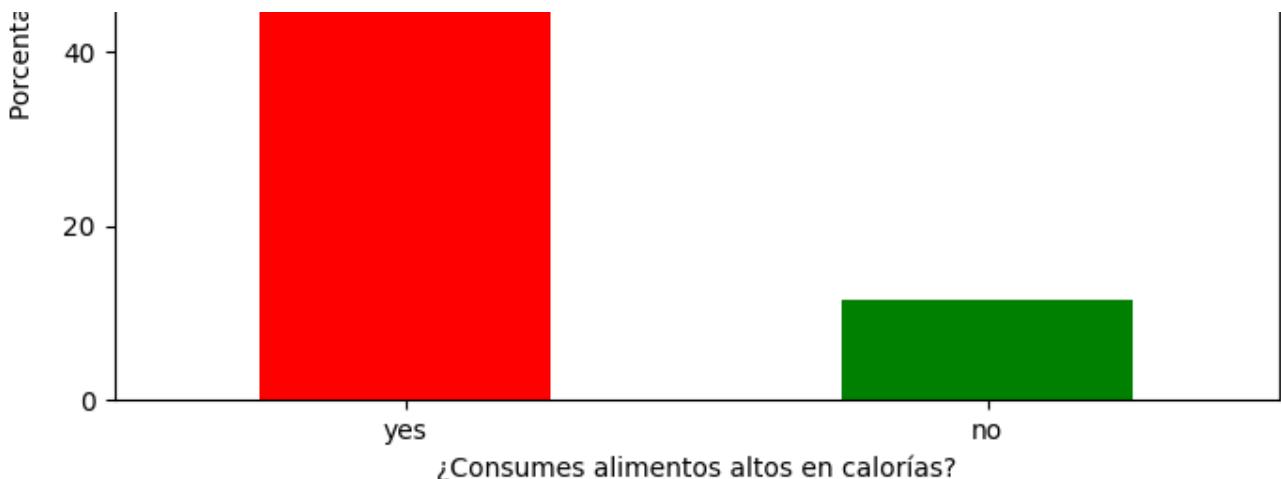
Si analizamos este gráfico podemos observar que mas del 80% de personas afirman haber tenido uno o varios casos de obesidad en el historial de su familia, dato que es alarmante.

### Personas que consumen alimentos ricos en calorías

```
favc_perc = df_obesidad['FAVC'].value_counts(normalize=True) * 100

# Crear el gráfico de barras con los porcentajes
plt.figure(figsize=(8, 6))
favc_perc.plot(kind='bar', color=['red', 'green'])
plt.xlabel('¿Consumes alimentos altos en calorías?')
plt.ylabel('Porcentaje de personas')
plt.title('Consumo de alimentos calóricos')
plt.xticks(rotation=0) # Rotar las etiquetas del eje x
plt.ylim(0, 100) # Establecer el límite del eje y de 0 a 100
plt.show()
```





Mas del 85% de las personas afirman consumir alimentos altos en calorías con frecuencia, lo cual nos da indicios de una de las posibles causas de la obesidad en algunas personas del dataset.

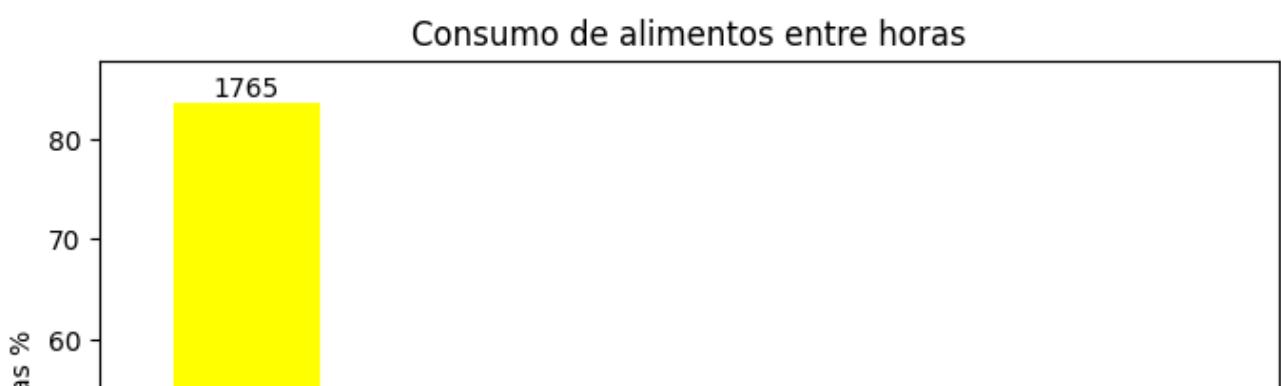
### Personas que consumen alimentos entre horas

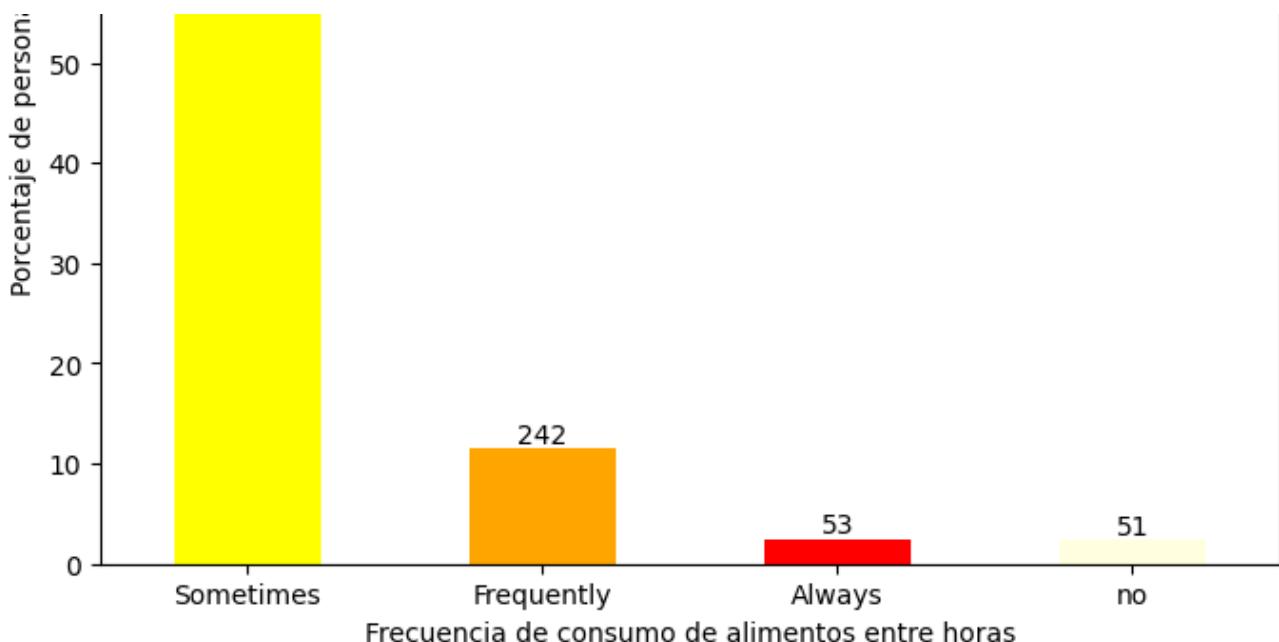
```
caec_counts = df_obesidad['CAEC'].value_counts()
caec_percentage = df_obesidad['CAEC'].value_counts(normalize=True) * 100

# Crear el gráfico de barras con los porcentajes y las etiquetas de número de personas
plt.figure(figsize=(8, 6))
ax = caec_percentage.plot(kind='bar', color=['yellow', 'orange', 'red', 'lightyellow'])

for i in range(len(caec_counts)):
    plt.text(i, caec_percentage[i], f'{caec_counts[i]}', ha='center', va='bottom')

plt.xlabel('Frecuencia de consumo de alimentos entre horas')
plt.ylabel('Porcentaje de personas %')
plt.title('Consumo de alimentos entre horas')
plt.xticks(rotation=0) # Rotar las etiquetas del eje x
plt.show()
```





Un poco mas del 80% tiene el habito de consumir algunas veces alimentos entre comidas, mientras que menos del 3% dice que no come entre comidas. Por lo que inferimos que es una practica normal entre las personas pero deben tener cuidado con lo que ingieren en cuestion de la tabla nutricional de los alimentos.

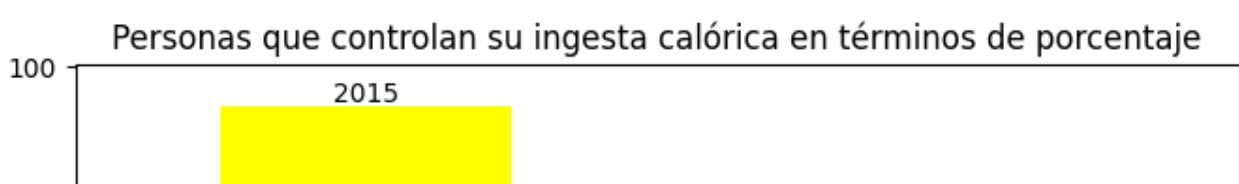
### Personas que controlan su ingesta calórica

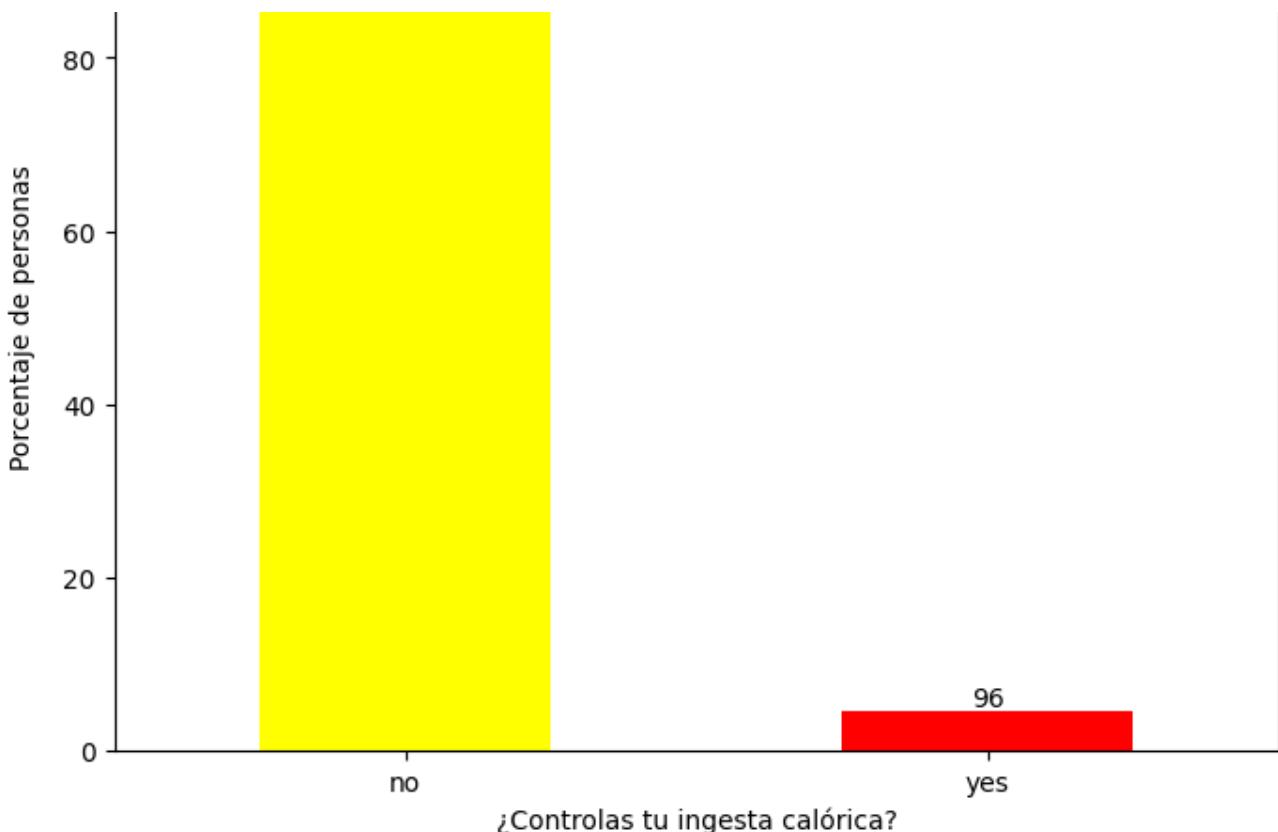
```
scc_counts = df_obesidad['SCC'].value_counts()
scc_percentage = df_obesidad['SCC'].value_counts(normalize=True) * 100

# Crear el gráfico de barras con los porcentajes
plt.figure(figsize=(8, 6))
ax = scc_percentage.plot(kind='bar', color=['yellow', 'red'])

for i in range(len(scc_counts)):
    plt.text(i, scc_percentage[i], f'{scc_counts[i]}', ha='center', va='bottom')

plt.xlabel('¿Controlas tu ingesta calórica?')
plt.ylabel('Porcentaje de personas')
plt.title('Personas que controlan su ingesta calórica en términos de porcentaje')
plt.xticks(rotation=0) # Rotar las etiquetas del eje x
plt.show()
```





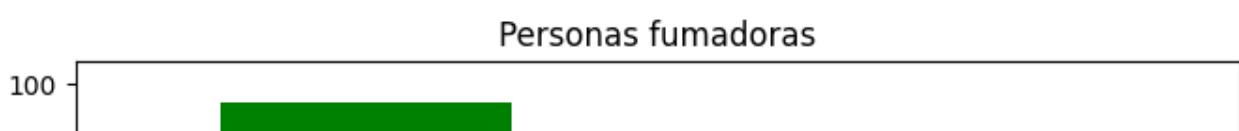
Este gráfico es alarmante, nos muestra que mas del 90% de los encuestados no tienen en cuenta las calorías que ingieren en todo el dia. Unos de los factores mas relacionados con el aumento de peso es el consumo excesivo de calorías de las que tu cuerpo quema, ya que el exceso se almacenará como grasa corporal, lo que puede llevar a un aumento de peso.

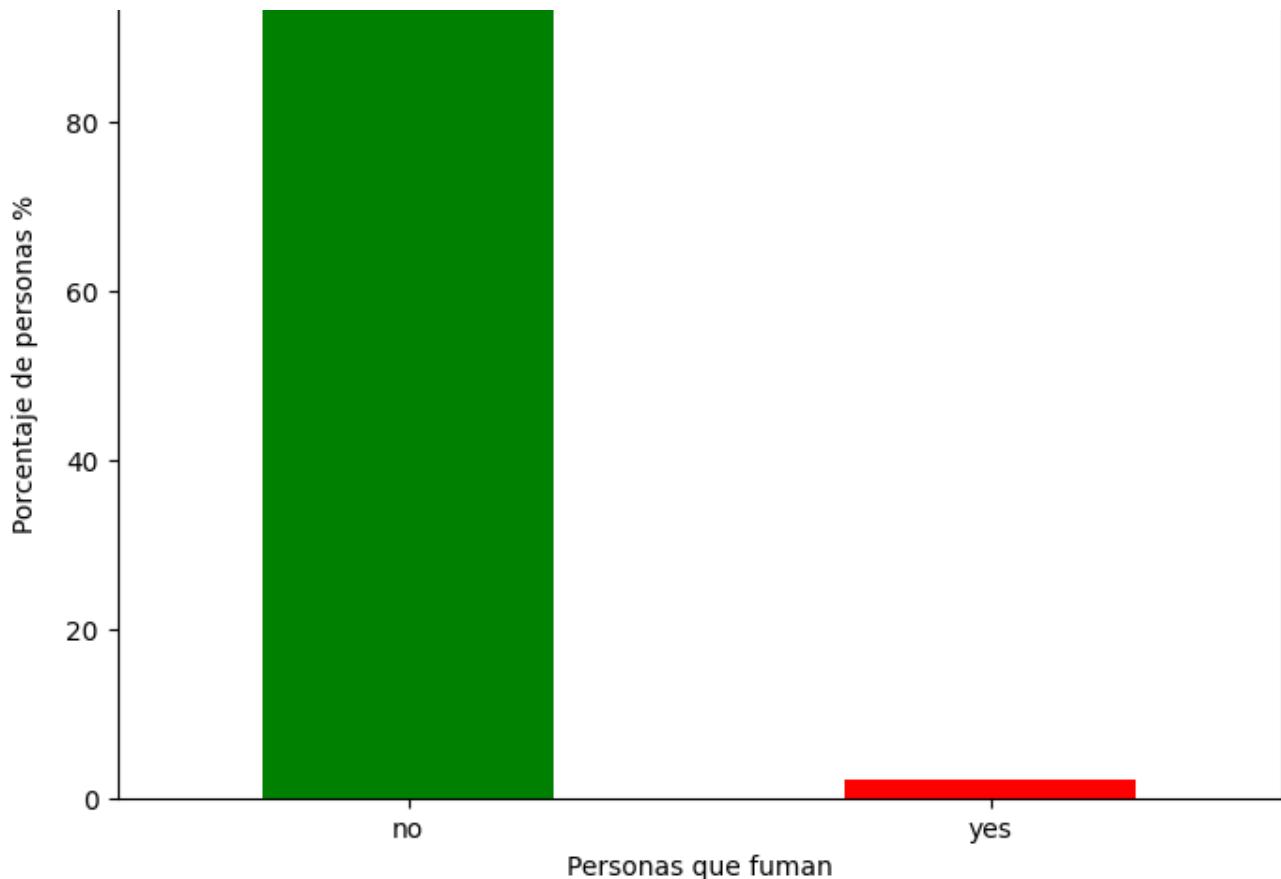
### Personas fumadoras

```
smoke_percentage = df_obesidad['SMOKE'].value_counts(normalize=True) * 100

# Crear el gráfico de barras con los porcentajes y las etiquetas de número de personas
plt.figure(figsize=(8, 6))
ax = smoke_percentage.plot(kind='bar', color=['green', 'red'])

plt.xlabel('Personas que fuman')
plt.ylabel('Porcentaje de personas %')
plt.title('Personas fumadoras')
plt.xticks(rotation=0) # Rotar las etiquetas del eje x
plt.show()
```





Es interesante ver como mas del 90% de las personas que fueron entrevistadas afirman que no son fumadores.

### Personas que con frecuencia ingieren bebidas alcohólicas

```
porcentajes = df_obesidad['CALC'].value_counts(normalize=True) * 100

plt.figure(figsize=(8, 6))
porcentajes.plot(kind='bar', color=['yellow', 'lightyellow', 'orange', 'red'])

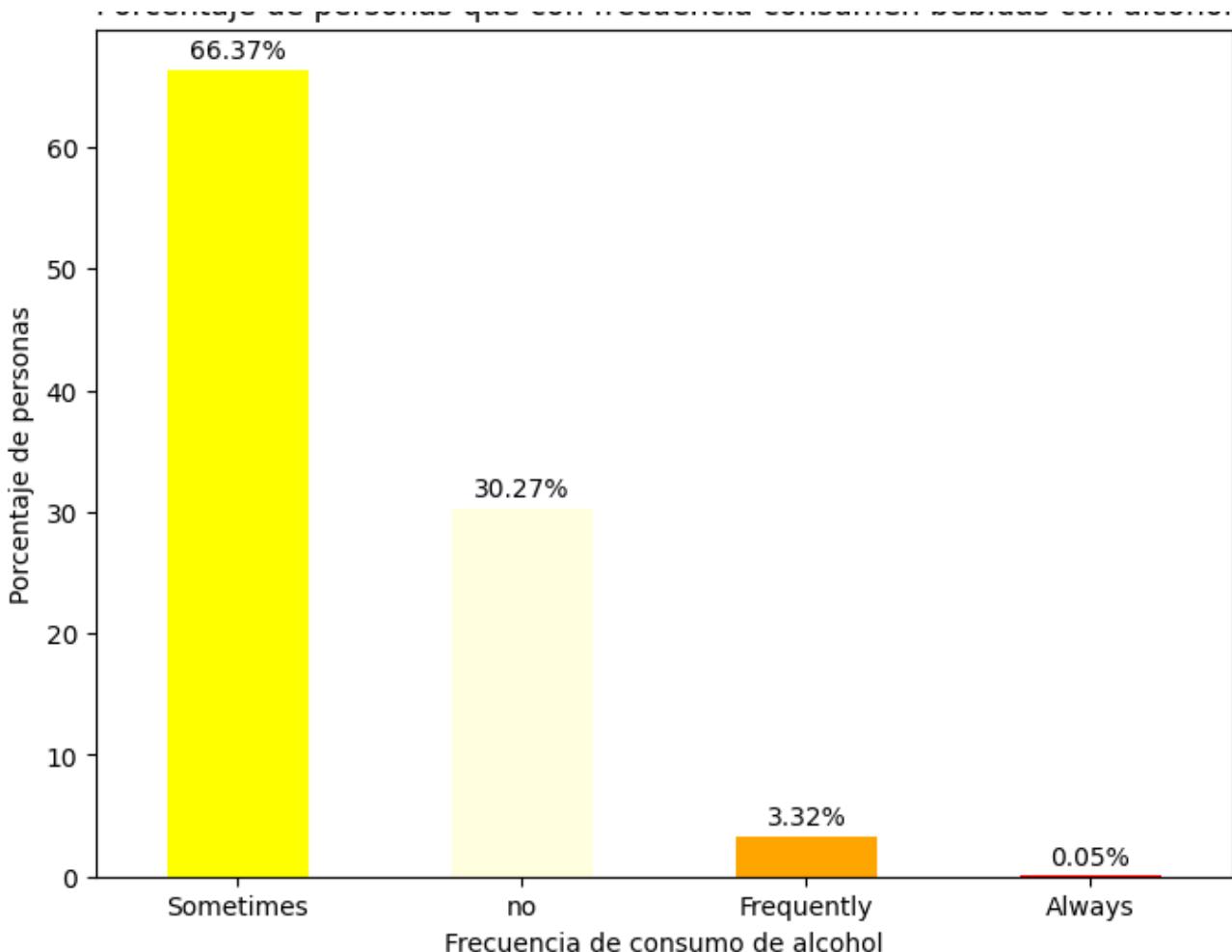
plt.xlabel('Frecuencia de consumo de alcohol')
plt.ylabel('Porcentaje de personas')
plt.title('Porcentaje de personas que con frecuencia consumen bebidas con alcohol')

plt.gca().set_xticklabels(porcentajes.index, rotation=0)

for i, porcentaje in enumerate(porcentajes):
    plt.text(i, porcentaje + 0.5, f'{porcentaje:.2f}%', ha='center', va='bottom')

plt.show()
```

Porcentaje de personas que con frecuencia consumen bebidas con alcohol

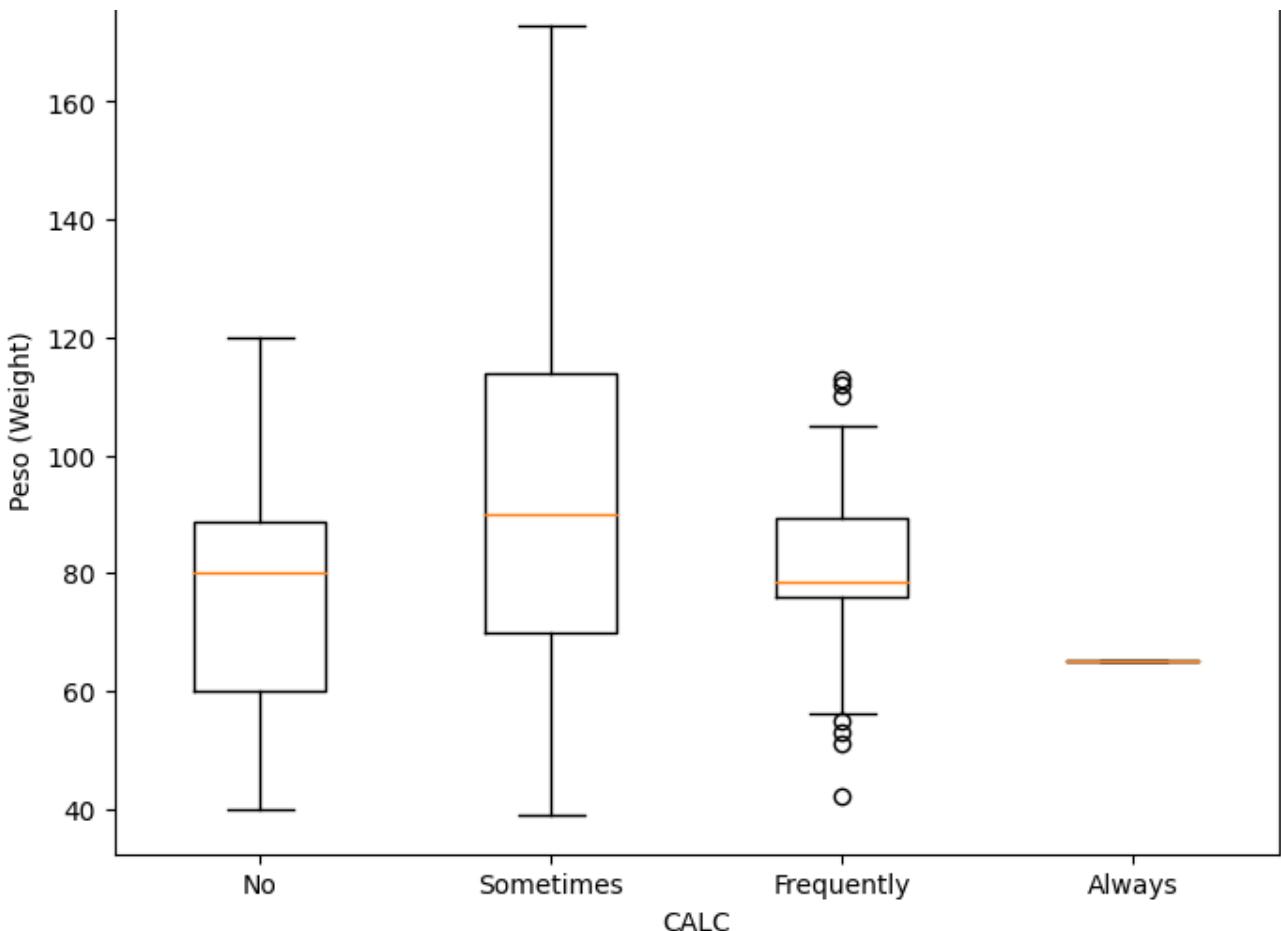


Mas del 66% del dataset eligieron la categoria "sometimes" indicando que para la mayoría de las personas encuestadas, el consumo de bebidas alcohólicas es un comportamiento esporádico en lugar de algo que hacen con frecuencia.

#### Gráfico de caja para el peso en relacion a la frecuencia de consumo de alcohol:

```
plt.figure(figsize=(8, 6))
plt.boxplot([df_obesidad[df_obesidad['CALC'] == 'no']['Weight'],
            df_obesidad[df_obesidad['CALC'] == 'Sometimes']['Weight'],
            df_obesidad[df_obesidad['CALC'] == 'Frequently']['Weight'],
            df_obesidad[df_obesidad['CALC'] == 'Always']['Weight']],
            labels=['No', 'Sometimes', 'Frequently', 'Always'])
plt.xlabel('CALC')
plt.ylabel('Peso (Weight)')
plt.title('Frecuencia de consumo de alcohol vs Peso')
plt.show()
```

Frecuencia de consumo de alcohol vs Peso

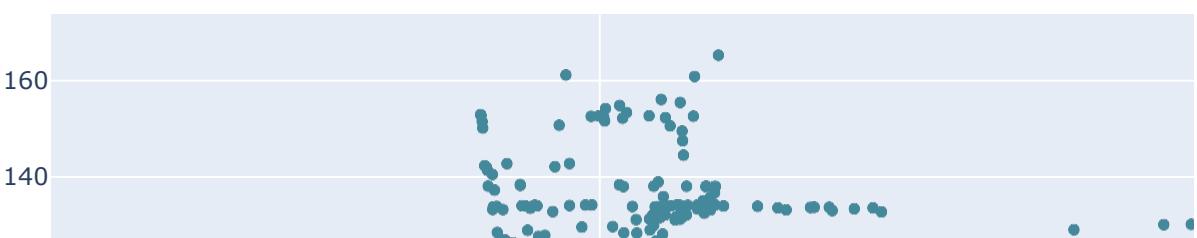


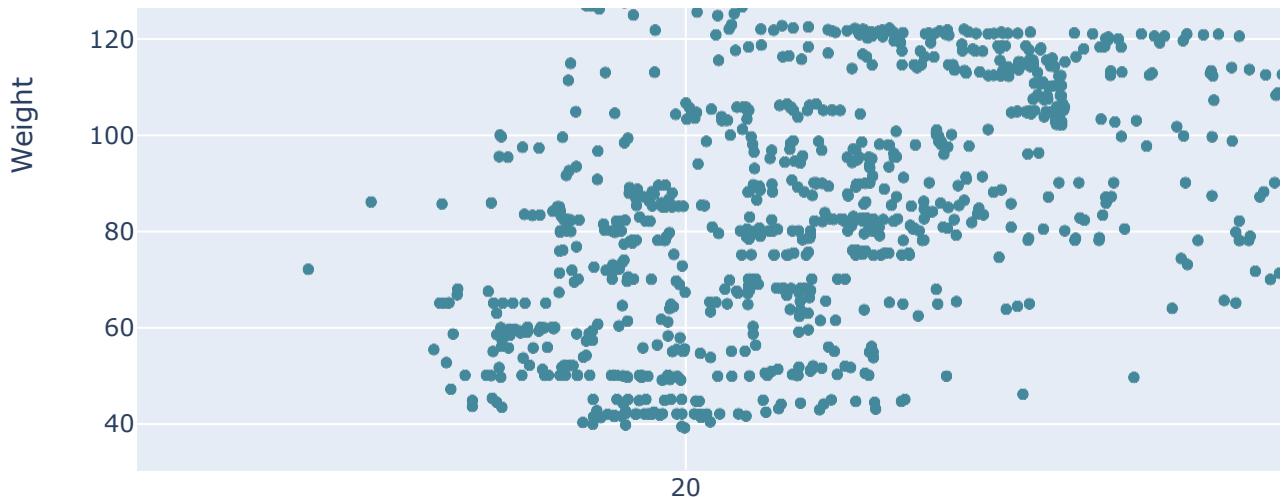
Podemos ver que hay un gran numeros de personas que dicen tomar bebidas alcohólicas en algunas ocasiones, ya que la distancia de la caja es grande y tiene cierta relación con el peso de las personas pero no es muy diciente analizarlo de esta forma.

### Grafico de dispersion de las personas teniendo en cuenta su peso en relacion a su edad

```
age_weight=df_obesidad.groupby(['Age']).agg({'Weight': 'mean'}).reset_index()
px.scatter(age_weight, x='Age', y='Weight', title='Peso vs Edad', color_discrete_sequence=
```

Peso vs Edad

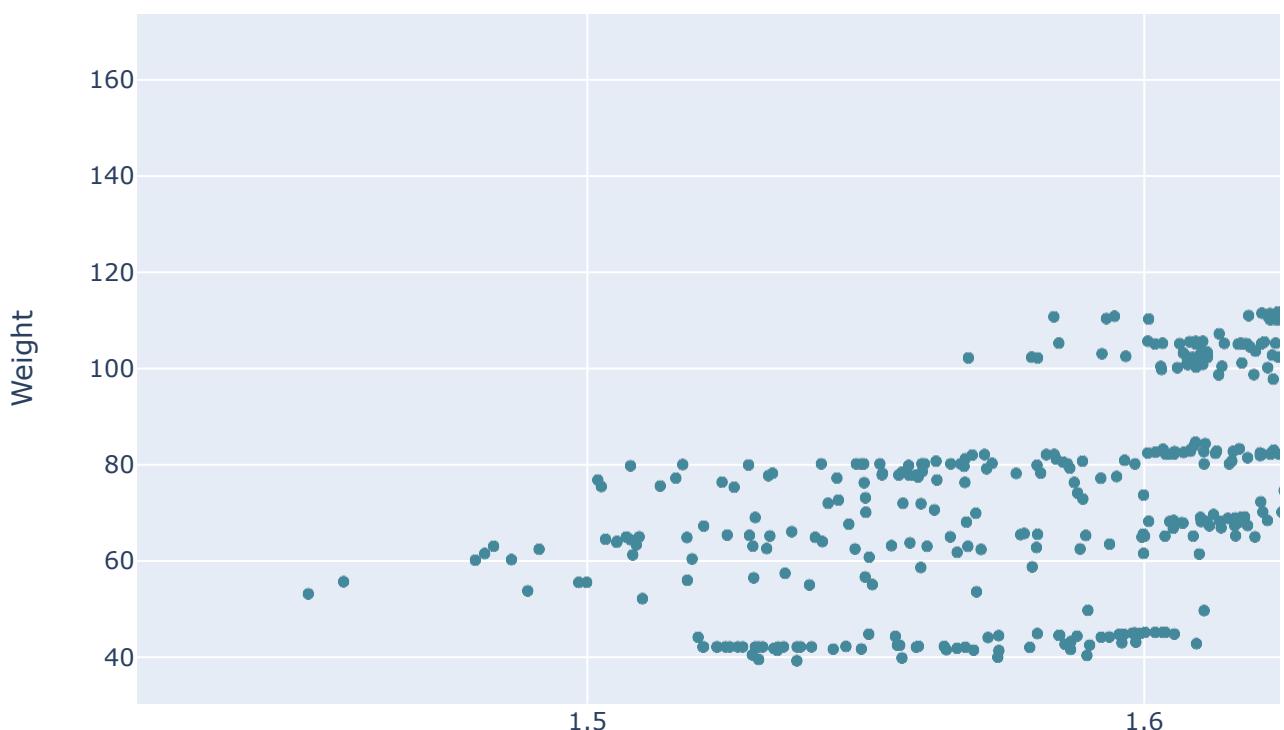




**Gráfico de dispersión de las personas teniendo en cuenta su peso en relación a su altura**

```
height_weight = df_obesidad.groupby(['Height']).agg({'Weight': 'mean'}).reset_index()  
px.scatter(height_weight, x='Height', y='Weight', title='Peso vs Altura', color_discrete_s
```

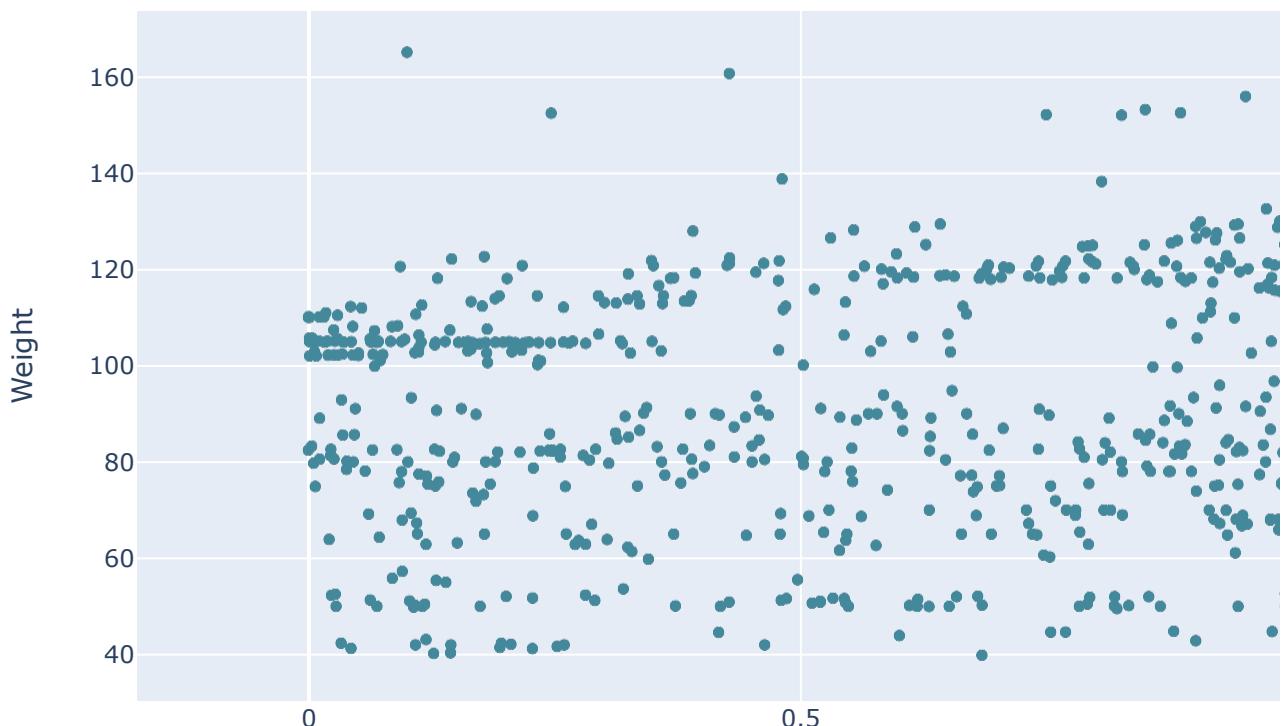
Peso vs Altura



## Gráfico de dispersión de las personas teniendo en cuenta su frecuencia de actividad física en relación a su peso:

```
faf_weight = df_obesidad.groupby(['FAF']).agg({'Weight': 'mean'}).reset_index()  
px.scatter(faf_weight, x='FAF', y='Weight', title='Frecuencia de actividad física vs Peso')
```

Frecuencia de actividad física vs Peso



## Transformando mis variables categoricas a numericas para poder realizar la matriz de correlacion.

```
df_obesidad['Gender'].replace(['Male', 'Female'], [0,1], inplace=True)  
  
# Columns with 'no', 'Sometimes', 'Frequently', 'Always'  
for column in ['CALC', 'CAEC']:  
    df_obesidad[column].replace(['no', 'Sometimes', 'Frequently', 'Always'], [0,1,2,3], in  
  
# Binary columns
```

```

for column in ['FAVC', 'SCC', 'SMOKE', 'family_history_with_overweight']:
    df_obesidad[column].replace(['no', 'yes'], [0,1], inplace=True)

df_obesidad['MTRANS'].replace(['Walking', 'Public_Transportation', 'Bike', 'Motorbike', 'A
df_obesidad['NObeyesdad'].replace(['Insufficient_Weight', 'Normal_Weight', 'Overweight_L

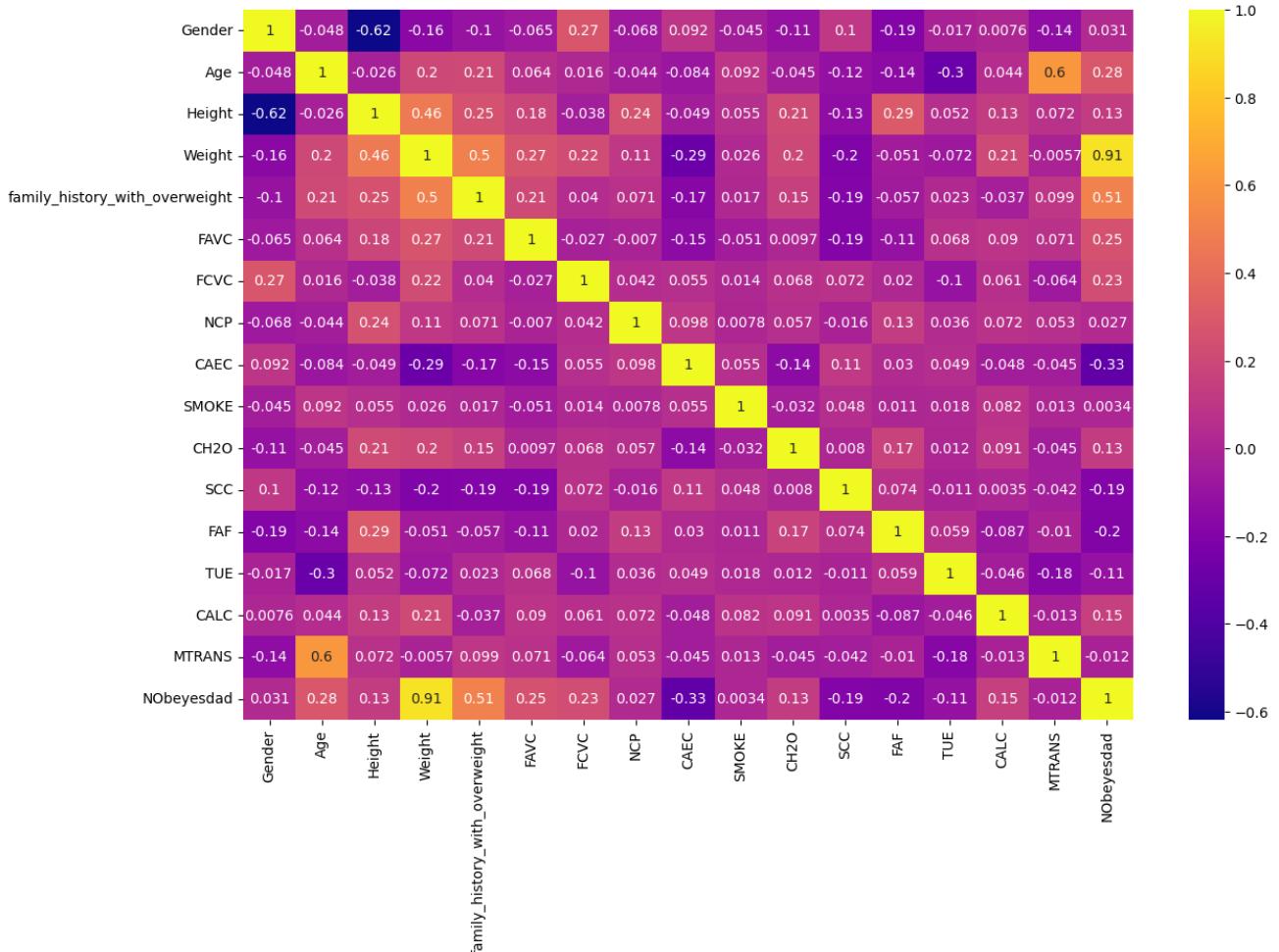
```

## Matriz de correlacion:

```
corr = df_obesidad.corr(numeric_only=True)
```

```
plt.figure(figsize=(14,9))
sns.heatmap(corr, cmap= 'plasma', annot = True)
```

<Axes: >



Mi matriz de correlación me esta dando resultados muy interesantes:

- Uno de ellos es la relación del peso y la altura donde podemos ver que es bastante alto.
- Otro es el alto valor de la relacion entre el peso y el historial familiar de obesidad, donde se evidencia que esto si puede influir en el estilo de vida de una persona.
- Fumar con relacion al peso no tiene mucho que ver con la obesidad ya que el numero es bastante bajo.
- La edad en relacion al peso es otra relación que no tiene mucho que ver esto debido a que depende de otros factores externos a esto.

## ▼ 8. Preparacion de datos para realizar Regresion Lineal

### Normalizando datos

```
scaler = StandardScaler()

# Estandarizar todas las variables numéricas del DataFrame
df_scaled = scaler.fit_transform(df_obesidad)

# Crear un nuevo DataFrame con las variables estandarizadas
df_processed = pd.DataFrame(df_scaled, columns=df_obesidad.columns)

# Variables independientes (X) y variable dependiente (y)

X = df_processed.drop(columns=['NObeyesdad']) # Características
y = df_processed['NObeyesdad'] # Variable a predecir

df_processed.head()
```

	Gender	Age	Height	Weight	family_history_with_overweight	FAVC
0	1.011914	-0.522124	-0.875589	-0.862558		0.472291 -2.759769
1	1.011914	-0.522124	-1.947599	-1.168077		0.472291 -2.759769
2	-0.988227	-0.206889	1.054029	-0.366090		0.472291 -2.759769
3	-0.988227	0.423582	1.054029	0.015808		-2.117337 -2.759769
4	-0.988227	-0.364507	0.839627	0.122740		-2.117337 -2.759769

Pasos siguientes:

[Generar código con df\\_processed](#) [Ver gráficos recomendados](#)

```
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=1)
```

## Inicializando el modelo de regresión lineal y Entrenando el modelo con los datos de entrenamiento

```
# Inicializar el modelo de regresión lineal
modelo = LinearRegression()

# Entrenar el modelo con los datos de entrenamiento
modelo.fit(X_train, y_train)

    ▾ LinearRegression
        LinearRegression()
```

## Calcular el coeficiente de determinación ( $R^2$ ) en el conjunto de prueba

```
r2 = modelo.score(X_test, y_test)
print("Coeficiente de determinación ( $R^2$ ):", r2)
```

Coeficiente de determinación ( $R^2$ ): 0.9475158238084375

En otras palabras, un valor de  $R^2$  cercano a 1 indica que el modelo de regresión explica muy bien la variabilidad de la variable dependiente utilizando las variables independientes. Esto sugiere que el modelo tiene un buen ajuste a los datos y es capaz de predecir la variable dependiente con precisión.

## Valores del error cuadrático medio (MSE) y error absoluto medio (MAE)

```
# Predicciones del modelo en el conjunto de prueba
predicciones = modelo.predict(X_test)

# Calcular el error cuadrático medio (MSE)
mse = mean_squared_error(y_test, predicciones)
print("Error cuadrático medio (MSE):", mse)

# Calcular el error absoluto medio (MAE)
mae = mean_absolute_error(y_test, predicciones)
print("Error absoluto medio (MAE):", mae)

Error cuadrático medio (MSE): 0.051910844169992955
Error absoluto medio (MAE): 0.17937393943682617
```

- El MSE es una medida de la calidad de una predicción numérica. Cuanto más bajo sea el valor del MSE, mejor será el rendimiento del modelo. En este caso, un MSE de aproximadamente 0.0519 indica que, en promedio, las predicciones del modelo están desviadas por 0.0519 unidades al cuadrado de los valores reales.
- El MAE es otra medida de la precisión de una predicción numérica. Al igual que el MSE, cuanto menor sea el valor del MAE, mejor será el rendimiento del modelo. Un MAE de aproximadamente 0.179 indica que, en promedio, las predicciones del modelo están desviadas por 0.179 unidades de los valores reales.

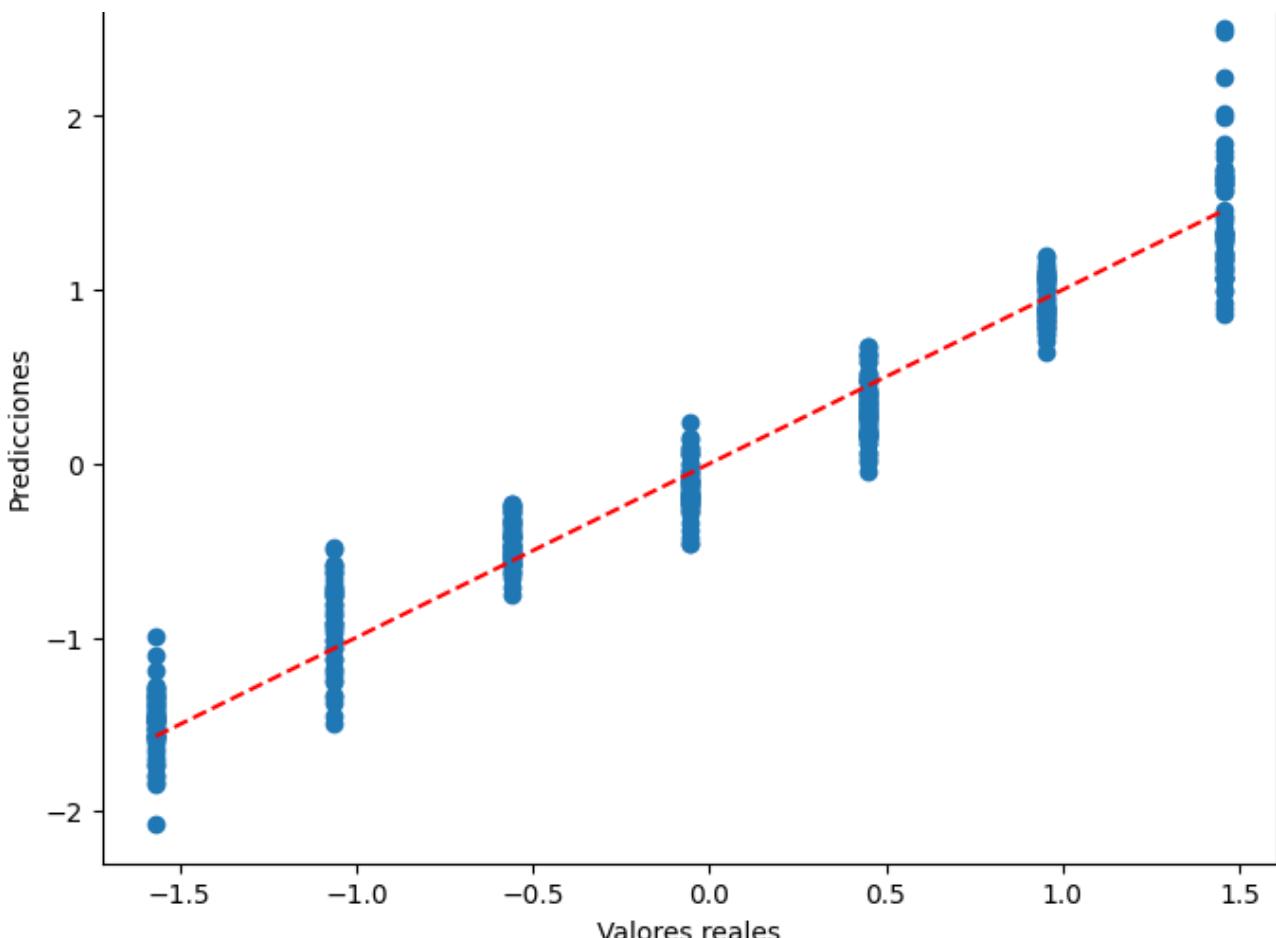
```
# Graficar valores reales vs predicciones
plt.figure(figsize=(8, 6))
plt.scatter(y_test, predicciones)
plt.plot([min(y_test), max(y_test)], [min(y_test), max(y_test)], '--', color='red')
plt.xlabel('Valores reales')
plt.ylabel('Predicciones')
plt.title('Predicciones vs. Valores reales')
plt.show()

# Coeficientes de la regresión lineal
coeficientes = modelo.coef_
intercepto = modelo.intercept_

print("Coeficientes de regresión:")
for i, coef in enumerate(coeficientes):
    print(f"El coeficiente para la característica {X.columns[i]} es {coef:.2f}")

print("Intercepto:", intercepto)
```

## Predicciones vs. Valores reales



Coeficientes de regresión:

El coeficiente para la característica Gender es -0.02  
El coeficiente para la característica Age es 0.07  
El coeficiente para la característica Height es -0.35  
El coeficiente para la característica Weight es 1.01  
El coeficiente para la característica family\_history\_with\_overweight es 0.06  
El coeficiente para la característica FAVC es 0.01  
El coeficiente para la característica FCVC es -0.00  
El coeficiente para la característica NCP es 0.02  
El coeficiente para la característica CAEC es -0.03  
El coeficiente para la característica SMOKE es -0.01  
El coeficiente para la característica CH20 es -0.01  
El coeficiente para la característica SCC es -0.01  
El coeficiente para la característica FAF es -0.03  
El coeficiente para la característica TUE es -0.01  
El coeficiente para la característica CALC es -0.02  
El coeficiente para la característica MTRANS es -0.04  
Intercepto: 0.0006591492180313284

**Lo anterior se hizo con los valores normalizados, ahora vamos hacerlo con los valores desnormalizados**

```
# Técnica para desnormalizar mis datos
```

```

mean_ = scaler.mean_
scale_ = scaler.scale_

descaler = StandardScaler()
descaler.mean_ = mean_
descaler.scale_ = scale_

desnormalized_data = descaler.inverse_transform(df_processed)
df_obesidad_des = pd.DataFrame(desnormalized_data, columns=df_obesidad.columns)

# Definir la función para clasificar el IMC
def classify_imc(value):
    if value < 18.5:
        return 'Bajo peso'
    elif 18.5 <= value < 25:
        return 'Normal'
    elif 25 <= value < 27.5:
        return 'Sobrepeso'
    elif 27.5 <= value < 30:
        return 'Preobesidad'
    elif 30 <= value < 35:
        return 'Obesidad tipo I'
    elif 35 <= value < 40:
        return 'Obesidad tipo II (severa)'
    else:
        return 'Obesidad tipo III (mórbida)'

# Crear la columna de BMI
df_obesidad_des['BMI'] = df_obesidad_des['Weight'] / (df_obesidad_des['Height'] ** 2)

# Aplicar classify_imc para clasificar los IMCs y agregar la clasificación al DataFrame
df_obesidad_des['BMI_group'] = df_obesidad_des['BMI'].apply(classify_imc)

# Definir X y y
X = df_obesidad_des[['Height', 'Weight']]
y = df_obesidad_des['BMI']

df_obesidad_des.head()

```

	Gender	Age	Height	Weight	family_history_with_overweight	FAVC	FCVC	NCP	CAEC	
0	1.0	21.0	1.62	64.0		1.0	0.0	2.0	3.0	1.0
1	1.0	21.0	1.52	56.0		1.0	0.0	3.0	3.0	1.0
2	0.0	23.0	1.80	77.0		1.0	0.0	2.0	3.0	1.0
3	0.0	27.0	1.80	87.0		0.0	0.0	3.0	3.0	1.0
4	0.0	22.0	1.78	89.8		0.0	0.0	2.0	1.0	1.0

Pasos siguientes:

[Generar código con df\\_obesidad\\_des](#) Ver gráficos recomendados

```
# Dividir los datos en conjuntos de entrenamiento y prueba
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

# Entrenar el modelo de regresión lineal
model = LinearRegression()
model.fit(X_train, y_train)

    ▾ LinearRegression
    LinearRegression()

# Predicciones del modelo en el conjunto de prueba
predicciones = model.predict(X_test)

# Calcular el error cuadrático medio (MSE)
mse = mean_squared_error(y_test, predicciones)
print("Error cuadrático medio (MSE):", mse)

# Calcular el error absoluto medio (MAE)
mae = mean_absolute_error(y_test, predicciones)
print("Error absoluto medio (MAE):", mae)

# Calcular R2
r2_score = model.score(X_test, y_test)
print('R²:', r2_score)

Error cuadrático medio (MSE): 0.7120549293333112
Error absoluto medio (MAE): 0.6354353662821867
R²: 0.989220460731366
```

## Probamos nuestro modelo para ver su respuesta

```
altura = 1.83 # Ejemplo de altura
peso = 105 # Ejemplo de peso

new_data = pd.DataFrame([[altura, peso]], columns=['Height', 'Weight'])

# Realizar la predicción
predicted_imc = model.predict(new_data)
print('IMC predicho:', predicted_imc[0])

# Clasificar el IMC predicho usando classify_imc
predicted_class = classify_imc(predicted_imc[0])
print('Clasificación del IMC predicho:', predicted_class)
```

IMC predicho: 31.749059949077775  
Clasificación del IMC predicho: Obesidad tipo I

```
# Graficar valores reales vs predicciones
```

```
plt.figure(figsize=(8, 6))
plt.scatter(y_test, predicciones)
plt.plot([min(y_test), max(y_test)], [min(y_test), max(y_test)], '--', color='red')
plt.xlabel('Valores reales IBM')
plt.ylabel('Predicciones IBM')
plt.title('Predicciones vs. Valores reales')
plt.show()
```

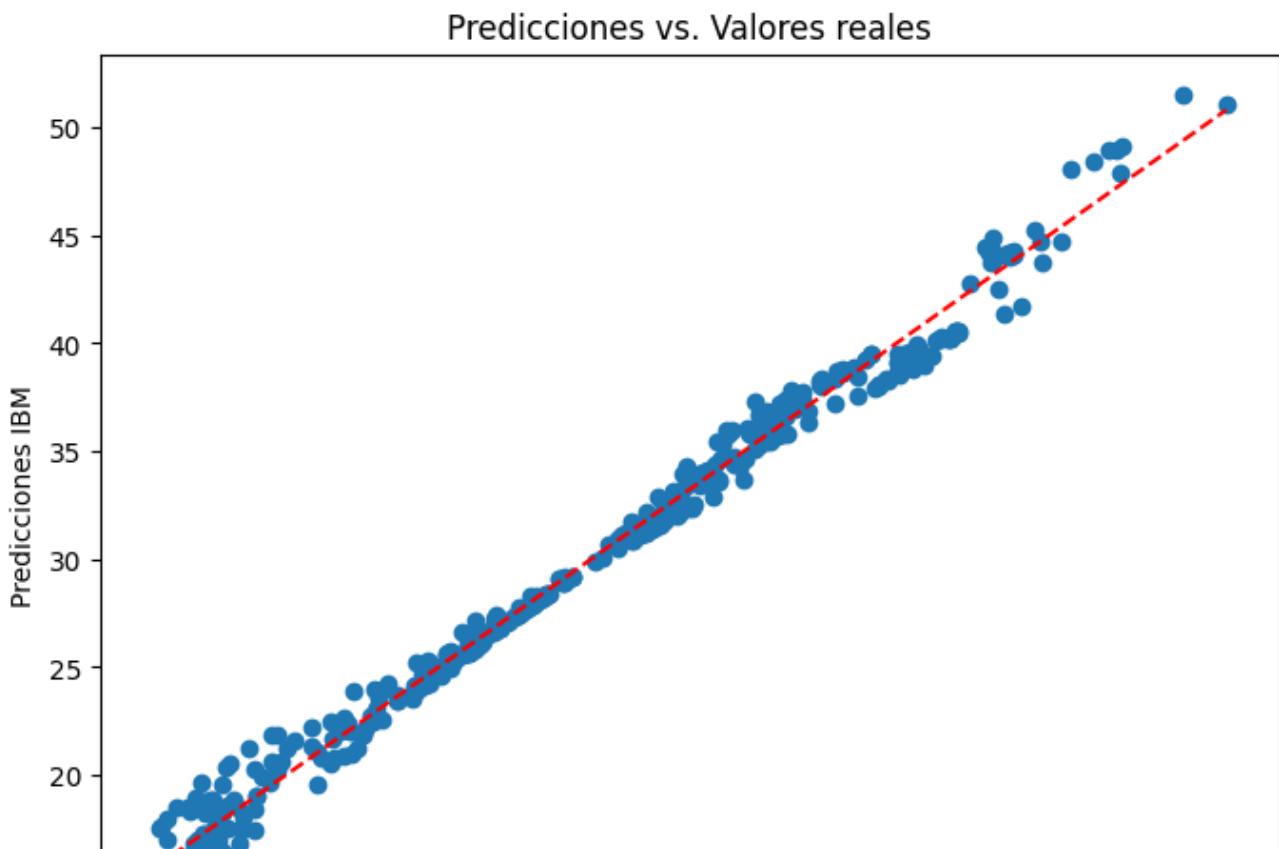
```
# Coeficientes de la regresión lineal
```

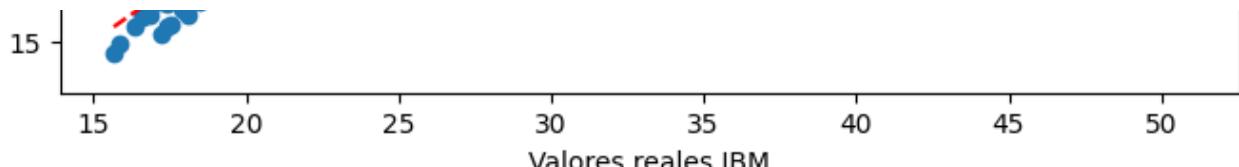
```
coeficientes = model.coef_
intercepto = model.intercept_
```

```
print("Coeficientes de regresión:")
for i, coef in enumerate(coeficientes):
```

```
    print(f"El coeficiente para la característica {X.columns[i]} es {coef:.2f}")
```

```
print("Intercepto:", intercepto)
```





Coeficientes de regresión:

El coeficiente para la característica Height es -32.86

El coeficiente para la característica Weight es 0.34

Intercepto: 56.16760525630208

## ✓ 9. Clasificación usando K-means

### Convirtiendo mis datos de caracteres a numerosicos

```
selected_columns = ['Gender', 'Age', 'Height', 'Weight', 'family_history_with_overweight', 'FA  
X = df_obesidad[selected_columns]  
  
categorical_columns = ['Gender', 'family_history_with_overweight', 'FAVC', 'CAEC', 'SMOKE  
  
label_encoder = LabelEncoder()  
for column in categorical_columns:  
    X[column] = label_encoder.fit_transform(X[column])  
  
X.head()
```

	Gender	Age	Height	Weight	family_history_with_overweight	FAVC	FCVC	NCP	CAEC	
0	1	21.0	1.62	64.0		1	0	2.0	3.0	1
1	1	21.0	1.52	56.0		1	0	3.0	3.0	1
2	0	23.0	1.80	77.0		1	0	2.0	3.0	1
3	0	27.0	1.80	87.0		0	0	3.0	3.0	1
4	0	22.0	1.78	89.8		0	0	2.0	1.0	1

Pasos siguientes:

[Generar código con X](#)

[Ver gráficos recomendados](#)

### Normalizando datos

```
scaler = MinMaxScaler()  
X_scaled = scaler.fit_transform(X)
```

```
X_scaled = pd.DataFrame(X_scaled, columns=X.columns)
X_scaled.head()
```

	Gender	Age	Height	Weight	family_history_with_overweight	FAVC	FCVC		
0	1.0	0.148936	0.320755	0.186567		1.0	0.0	0.5	0.
1	1.0	0.148936	0.132075	0.126866		1.0	0.0	1.0	0.
2	0.0	0.191489	0.660377	0.283582		1.0	0.0	0.5	0.
3	0.0	0.276596	0.660377	0.358209		0.0	0.0	1.0	0.
4	0.0	0.170213	0.622642	0.379104		0.0	0.0	0.5	0.

Pasos siguientes:

[Generar código con X\\_scaled](#)

[Ver gráficos recomendados](#)

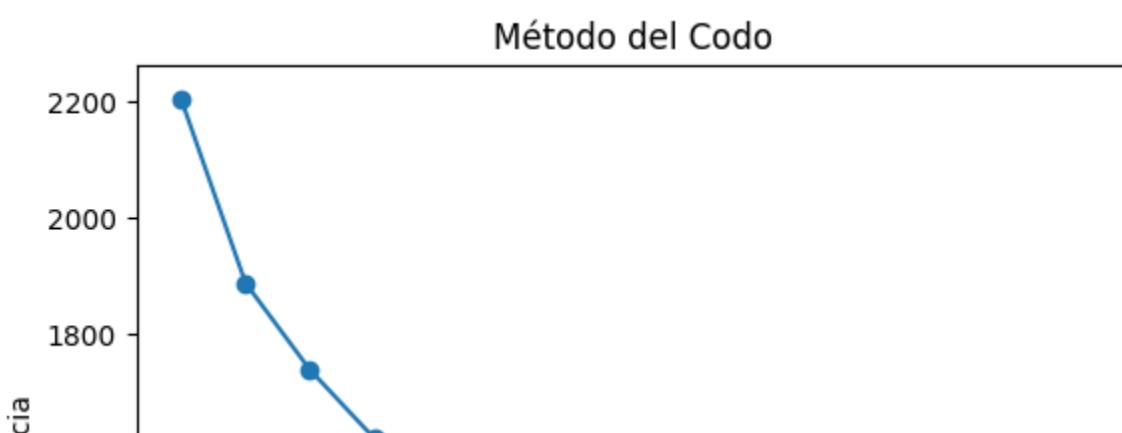
**Para determinar el numero óptimo de clusters usamos el metodo del codo**

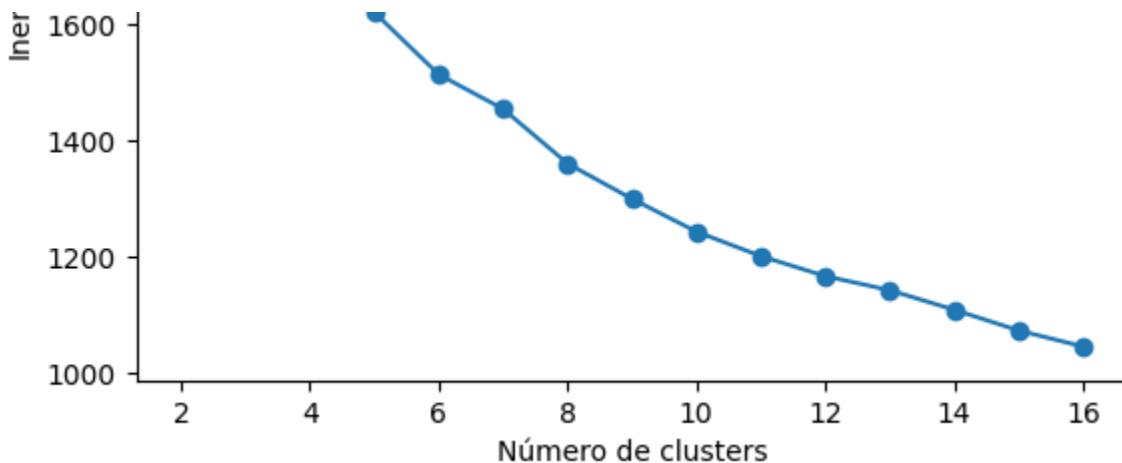
```
inertias = []
for k in range(2, 17):
    kmeans = KMeans(n_clusters=k, init='k-means++', random_state=10)
    kmeans.fit(X_scaled)
    inertias.append(kmeans.inertia_)

# Graficar la inercia vs. el número de clusters

plt.plot(range(2, 17), inertias, marker='o')
plt.xlabel('Número de clusters')
plt.ylabel('Inercia')
plt.title('Método del Codo')
plt.show()

/usr/local/lib/python3.10/dist-packages/sklearn/cluster/_kmeans.py:870: FutureWarning
  The default value of `n_init` will change from 10 to 'auto' in 1.4. Set the value of
/usr/local/lib/python3.10/dist-packages/sklearn/cluster/_kmeans.py:870: FutureWarning
  The default value of `n_init` will change from 10 to 'auto' in 1.4. Set the value of
/usr/local/lib/python3.10/dist-packages/sklearn/cluster/_kmeans.py:870: FutureWarning
  The default value of `n_init` will change from 10 to 'auto' in 1.4. Set the value of
/usr/local/lib/python3.10/dist-packages/sklearn/cluster/_kmeans.py:870: FutureWarning
  The default value of `n_init` will change from 10 to 'auto' in 1.4. Set the value of
/usr/local/lib/python3.10/dist-packages/sklearn/cluster/_kmeans.py:870: FutureWarning
```





## Escogemos el numero optimo de clusters

```
# Escogemos que el numero de clusters va ser de 6  
optimal_k = 6  
  
#Modelo KMeans de entrenamiento  
  
kmeans = KMeans(n_clusters=optimal_k, init='k-means++', n_init=50, random_state=0)  
clusters = kmeans.fit_predict(X_scaled)  
  
cluster_labels = kmeans.labels_  
  
df_obesidad['Cluster'] = cluster_labels
```

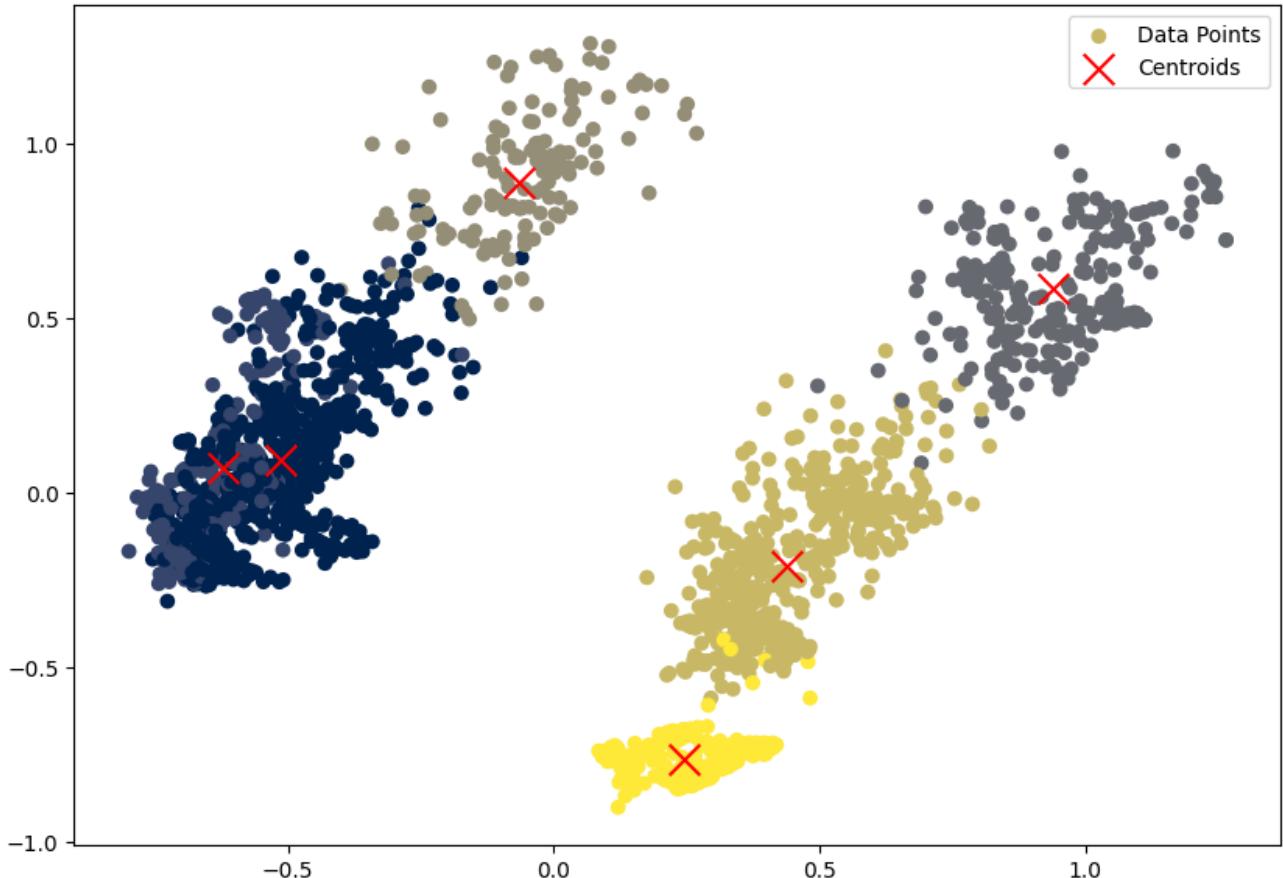
## Aplicamos PCA

```
pca = PCA(n_components=3)  
df_pca = pca.fit_transform(X_scaled)  
centroids = kmeans.cluster_centers_  
centroids_pca = pca.transform(centroids)  
  
plt.figure(figsize=(10, 7))  
plt.scatter(df_pca[:, 0], df_pca[:, 1], c=clusters, cmap='cividis', marker='o', label='Da  
plt.scatter(centroids_pca[:, 0], centroids_pca[:, 1], c='red', marker='x', s=200, label='  
plt.title('Gráfico usando PCA')  
plt.legend()  
plt.show()
```

/usr/local/lib/python3.10/dist-packages/sklearn/base.py:439: UserWarning:

X does not have valid feature names, but PCA was fitted with feature names

Gráfico usando PCA



```
df_obesidad['Cluster_Label'] = df_obesidad['Cluster'].replace([0,1,2,3,4,5],['Riesgo Bajo',
```

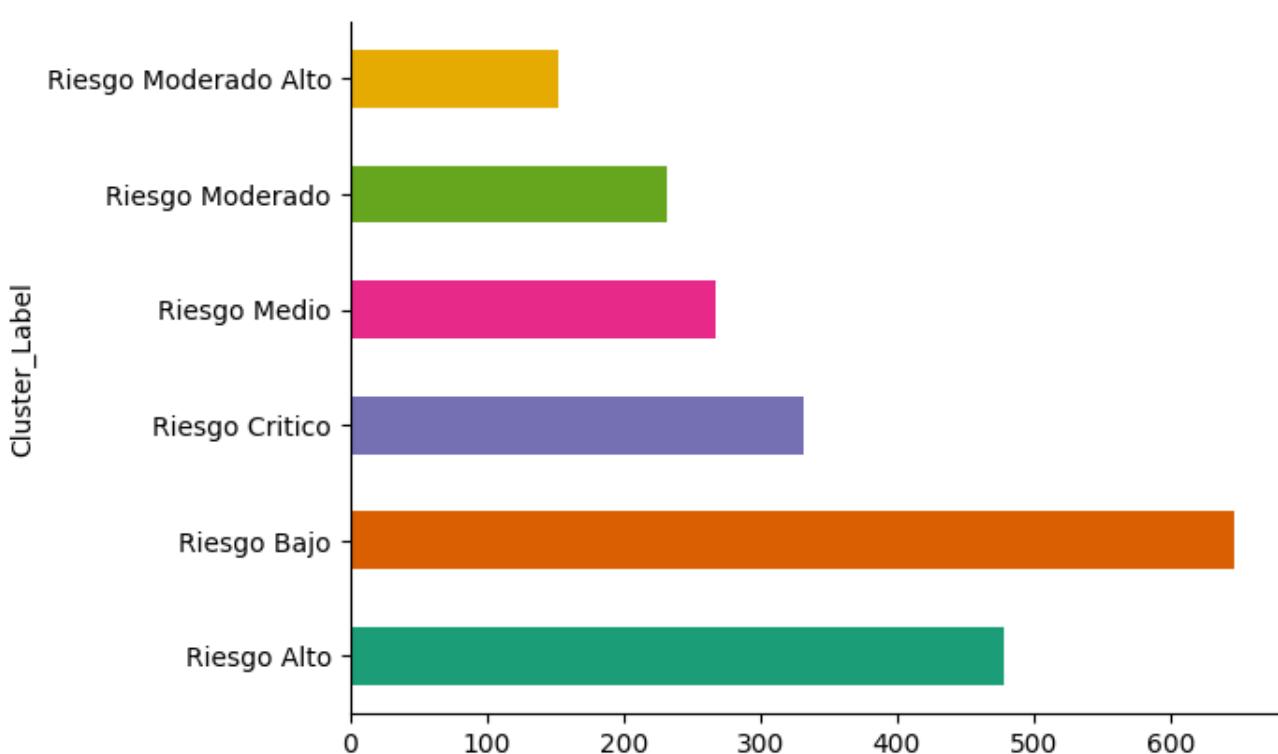
```
df_obesidad.head()
```

	Gender	Age	Height	Weight	family_history_with_overweight	FAVC	FCVC	NCP	CAEC	
0	1	21.0	1.62	64.0		1	0	2.0	3.0	1
1	1	21.0	1.52	56.0		1	0	3.0	3.0	1
2	0	23.0	1.80	77.0		1	0	2.0	3.0	1
3	0	27.0	1.80	87.0		0	0	3.0	3.0	1
4	0	22.0	1.70	80.0		0	0	2.0	4.0	1

Pasos siguientes: [Generar código con df\\_obesidad](#)

[Ver gráficos recomendados](#)

```
df_obesidad.groupby('Cluster_Label').size().plot(kind='barh', color=sns.palettes.mpl_pale  
plt.gca().spines[['top', 'right',]].set_visible(False)
```



## ▼ 10. Conclusión

- Como conclusion del proyecto tenemos la correcta visualizacion de gráficas necesarias para entender el contexto del dataset, ya que tenemos 17 columnas de las cuales la mayoria aportan informacion muy valiosa que podemos usar y transformar de ser necesario para elaborar nuestro EDA.
- El metodo de regresion lineal para realziar la predicción segun las 2 variables estudiadas y la variable a predecir fue el adecuado obteniendo resultados muy buenos y su posterior clasificación.
- Para clasificar las personas segun su nivel de obesidad usamos el cluster KMeans que nos arrojo una buena separacion de caracteristicas en comun dandonos el numero de cluster de 6 que se dedujo a partir del metodo del codo en la grafica realizada.

## 11. Bibliografía

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