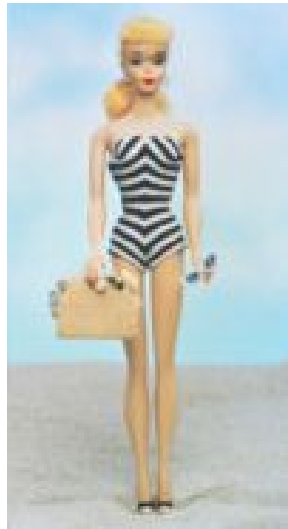


What about Proportions in Our Culture?



<http://en.wikipedia.org/wiki/Barbie>

Activity: Measure Barbie Doll and Scale to Full Size

$$ScaleFactor = \frac{Normal\ Height}{Barbie's\ Height} = \frac{60''}{12''} = 5$$

Measure Barbie. Multiply measured values by *ScaleFactor*. Compare to normal sizes. To what degree do Barbie's measurements fit the proportions of a normal or typical female?

	Measurement	Scales to	Normal
Chest			
Hip			
Finger Length			
Head Height	1.5"	7.5"	
Head Circumference			
Shoulder Width			
Arm Length			
Foot Length			
Waist			

Note: Barbie's head is about 0.125 times her height – about 1/8 of her height.

Reference Data for body measurements: (note: average female height is 5'4")
 Data from: http://jadephoenix.org/lvtgw/Info_hm/HowTo/bod_num1.htm

IN HEIGHT FROM THE GROUND:

ITEM	Nominal		Nominal		Normalized to height	
	MALE	sigma	FEMALE	sigma	MALE	FEMALE
Top of Head	68.60	2.74	64.25	2.58	1.000	1.000
Shoulder	56.65	2.46	52.50	2.49	.826	.817
Elbow	43.10	2.01	40.50	1.88	.628	.630
Waist	41.65	2.22	40.00	2.07	.607	.623
Knee (top)	20.90	1.34	18.95	1.06	.305	.295

DIFFERENCE MEASUREMENTS:

ITEM	MALE		FEMALE		Normalized to Height	
	MALE	sigma	FEMALE	sigma	MALE	FEMALE
Shoulder-Crotch/Torso Length	23.6	2.16	22.6	2.19	0.344	0.352
Shoulder-Knee/Slip Length	35.75	1.9	33.55	1.78	0.521	0.522
HEAD / HAND / FOOT SIZES:						
Head Circumference / Hat Size	22.05	0.68	21.65	0.66	0.321	0.337
Head Breadth	6	0.25	5.73	0.24	0.087	0.089
Ear Length(Height)	2.45	0.17	2.06	0.17	0.036	0.032
Neck Circ/Size	14.8	0.79	13.1	0.79	0.216	0.204
Palm Length	4.19	0.26	3.9	0.21	0.061	0.061
Hand Length	7.49	0.39	7.1	0.48	0.109	0.111
Finger Length	3.3	0.32	3.2	0.35	0.048	0.05
Hand Breadth	3.52	0.19	3.03	0.19	0.051	0.047
Heel \ Ankle Circumference/ Sandal Strap size	13.45	0.68	12.16	0.58	0.196	0.189
Foot Circumference at the ball	9.83	0.59	8.91	0.45	0.143	0.139
Foot Breadth/Shoe Width	3.91	0.23	3.5	0.21	0.057	0.054
Bust Size 38 & Shirt (10)Dress	37.35	2.64	35.15	2.64	0.544	0.547
Waist Size	32.35	3.31	28.15	2.89	0.472	0.438
Hip Size	37.8	2.61	37.75	2.46	0.551	0.588
Foot Length/Shoe Size	10.53	0.53	9.58	0.51	0.153	0.149
Size 10.5 Men & Size 8 Women						
Hand Circumference/Glove Size XL Men & M Women	8.48	0.49	7.22	0.36	0.124	0.112
Trunk Circumference/Bathing Suit Girth/Full Torso	64.8	3.34	60.75	2.89	0.945	0.946
Biceps Circ (flexed)	12.6	1.22	10.6	0.91	0.184	0.165
Forearm Circ (flexed)	11.65	0.82	9.75	0.64	0.17	0.152
Wrist Circum.	6.75	0.33	5.9	0.3	0.098	0.092
Upper Thigh Circ.	22	1.88	22.3	1.88	0.321	0.347
Mid Calf Circ.	14.3	1.16	13.7	1.03	0.208	0.213
Ankle Circ.	8.75	0.7	8.3	0.55	0.128	0.129

<http://www.answers.com/topic/female-body-shape?cat=health>

Three inflection points = The female body has three key physical points of inflection:

Chest, which is measured across the fullest part of the bust

Waist, which is usually measured at the smallest circumference of the abdomen

Hips, which is usually measured at the largest circumference of the hips and buttocks

Four combinatorial structures (Independent of fat percentage, weight or width) most female bodies have one of four elementary geometries, ordered by their commonality in western society.

Banana or Straight - the waist circumference is at least 75% of the chest or hips circumferences, about the same.

Pear or Spoon or Bell (Triangle upward) - the waist circumference is at least 75% of the chest circumference, and the hips circumference is at least 110% of the chest circumference.

Apple (Triangle downward) - the waist circumference is at most 75% of the chest circumference, and the chest circumference is at least 110% of the hips circumference.

Hourglass shape (Triangles opposing, facing in) - the waist circumference is less than 75% of the chest or hips circumferences, which are virtually the same.