

KIOT
Leather Engineering



INTRODUCTION TO LEATHER PRODUCT MANUFACTURING

PPT- 2

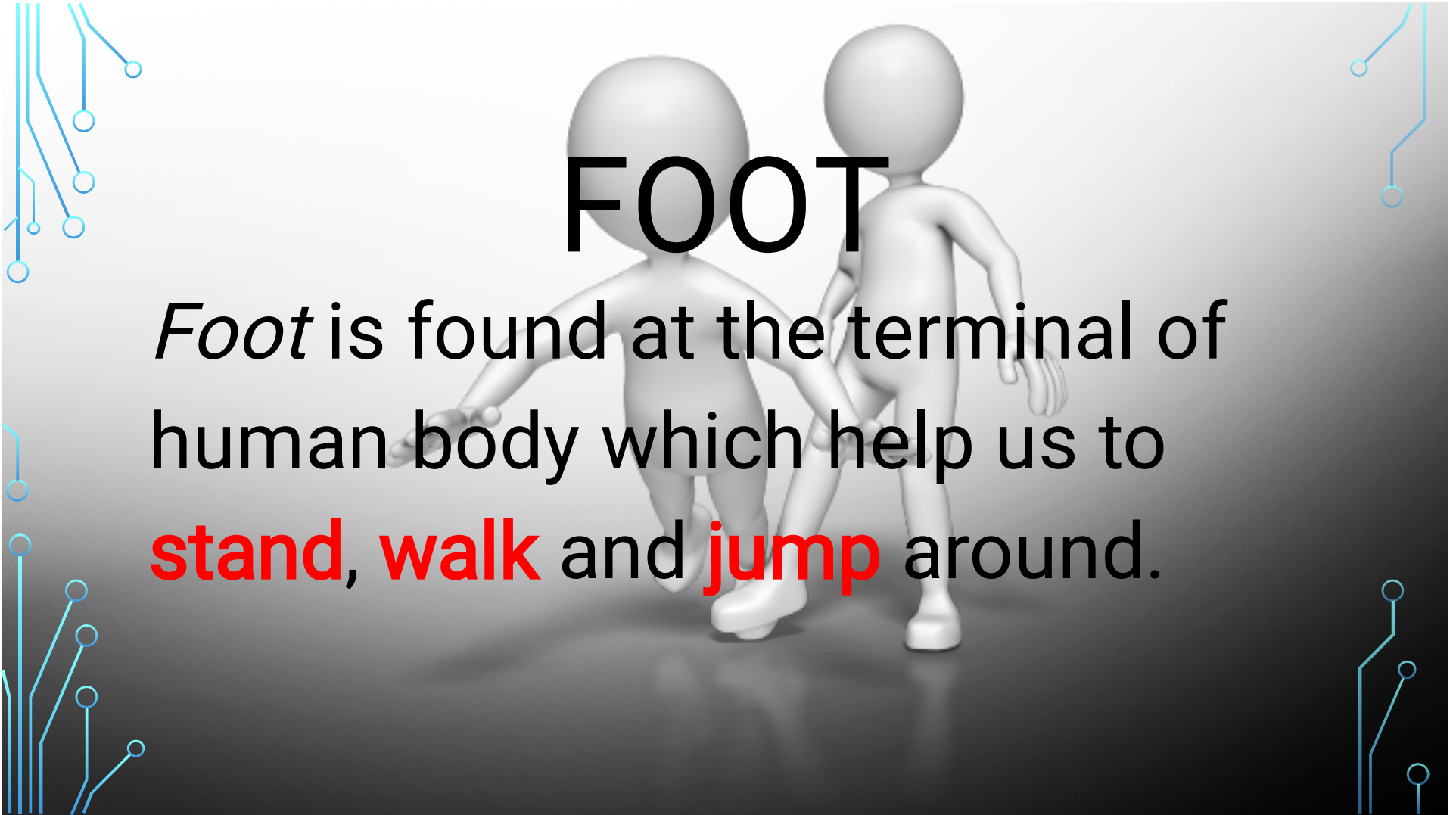
Shikur M.

ANATOMY STRUCTURE OF HUMAN FOOT AND THEIR FUNCTION



FOOT

Foot is found at the terminal of human body which help us to **stand, walk and jump** around.



FOOT CONTAINS;-

- ✓ *Bones*
- ✓ *Joints*
- ✓ *Ligaments*
- ✓ *Muscles*
- ✓ *Tendons*
- ✓ *Nerves*
- ✓ *Blood vessels*



*26 Bones, 33 Joints,
20 Muscles and
109 Ligaments*



BONE

We can generally classify feet bones in 3 categories;-

- 1) *Tarsals*
- 2) *Metatarsals*
- 3) *Phalanges*



1) *TARSAL*

There are 7 bones in the tarsal bone

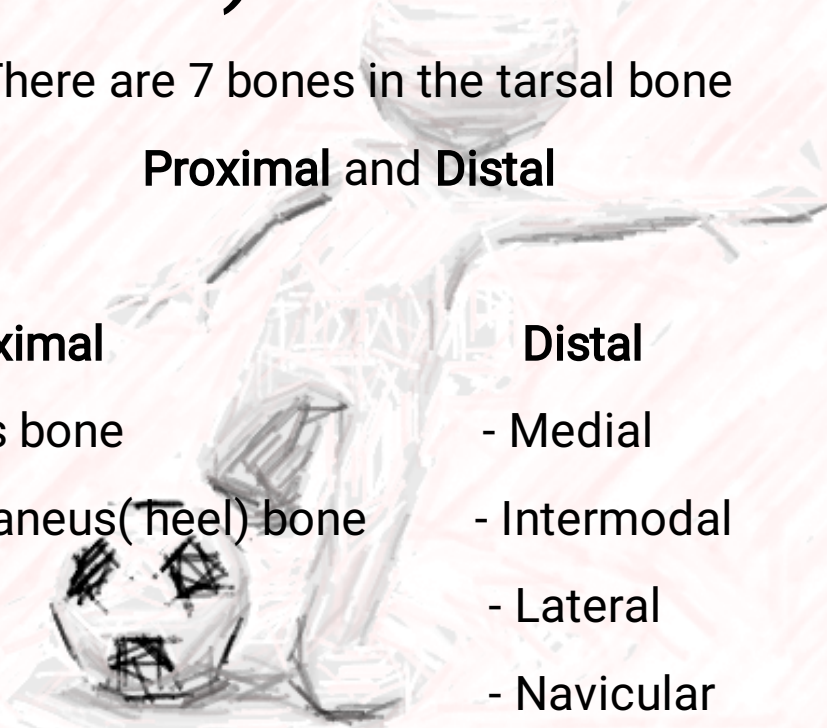
Proximal and Distal

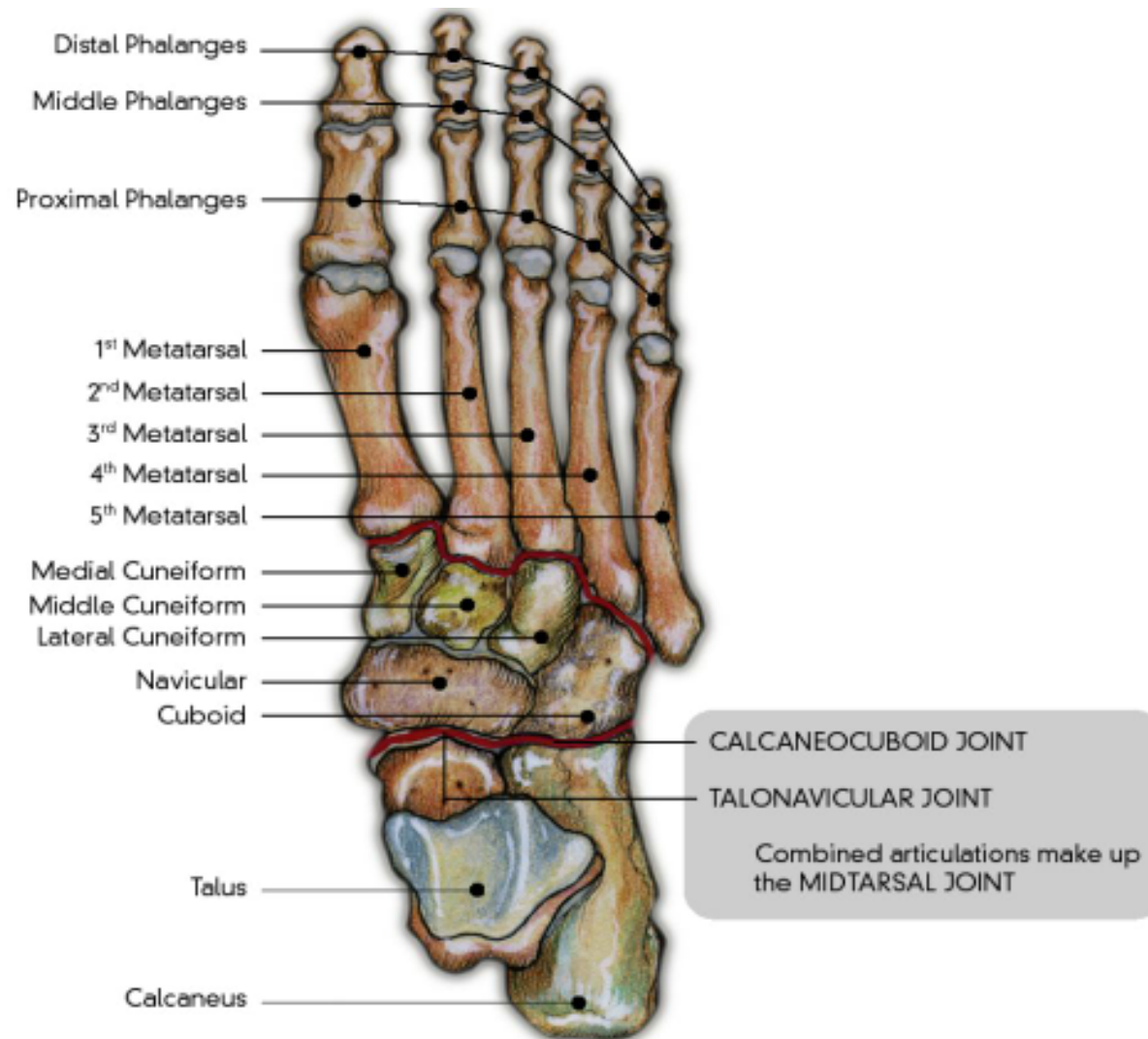
Proximal

- Talus bone
- Calcaneus(heel) bone

Distal

- Medial
- Intermodal
- Lateral
- Navicular
- Cuboid





Combined articulations make up
the MIDTARSAL JOINT

TALONAVICULAR JOINT

CALCANEOCUBOID JOINT

SUBTALAR JOINT

Medial Cuneiform (Not Visible)

Middle Cuneiform

Lateral Cuneiform

1st Metatarsal

Calcaneus

Navicular

Talus

Cuboid

2nd Metatarsal

3rd Metatarsal

4th Metatarsal

5th Metatarsal

Distal Phalange

Middle Phalange

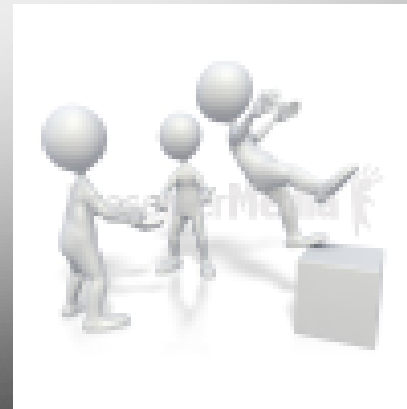
Proximal Phalange

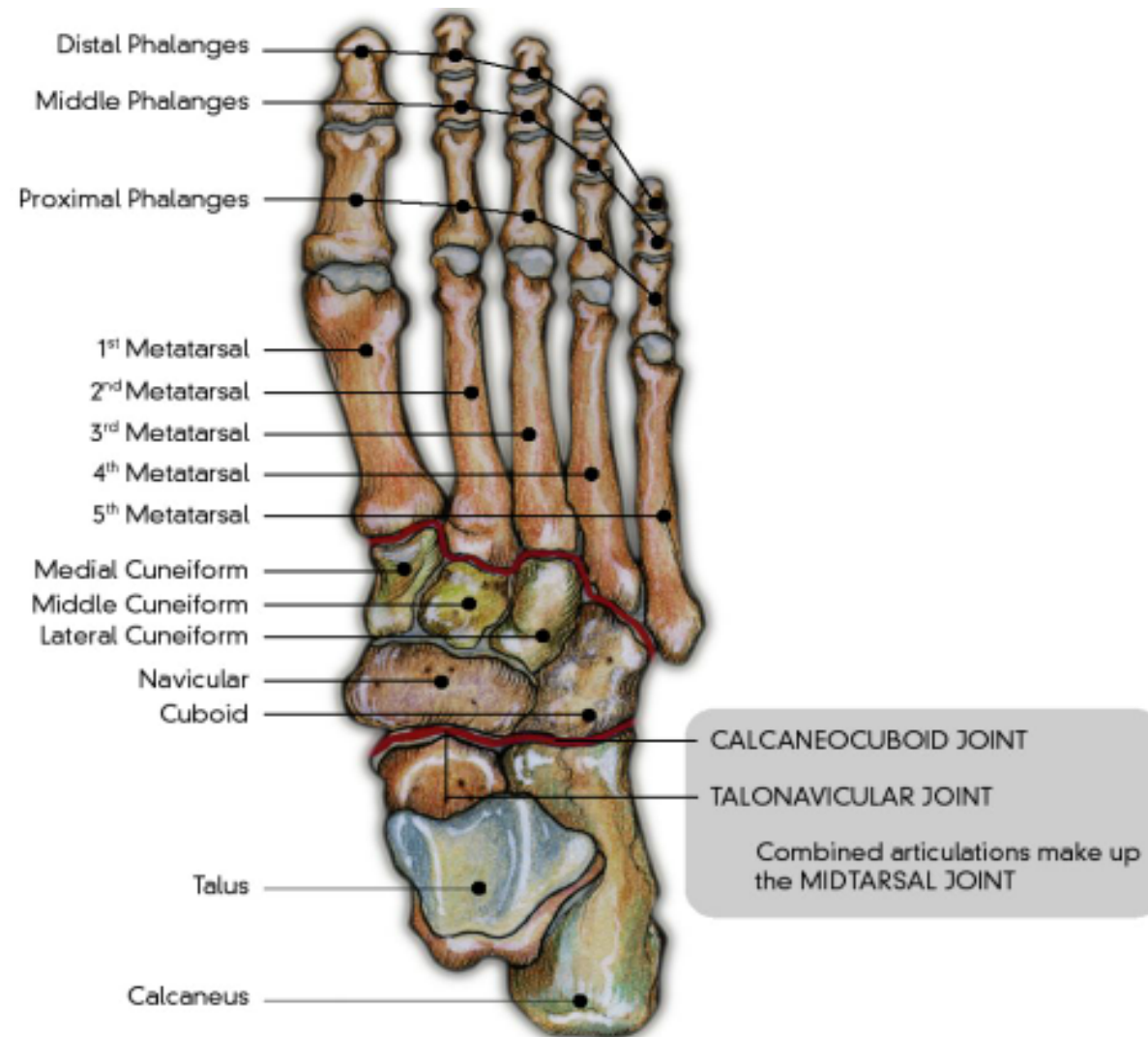
Lateral View, right foot

2) METATARSALS

There are 5 metatarsal bones. These bones have three parts. These are;-

- 1) Base
- 2) Shaft
- 3) Head





Combined articulations make up
the MIDTARSAL JOINT

TALONAVICULAR JOINT

CALCANEOCUBOID JOINT

SUBTALAR JOINT

Medial Cuneiform (Not Visible)

Middle Cuneiform

Lateral Cuneiform

1st Metatarsal

Calcaneus

Navicular

Talus

Cuboid

2nd Metatarsal

3rd Metatarsal

4th Metatarsal

5th Metatarsal

Distal Phalange

Middle Phalange

Proximal Phalange

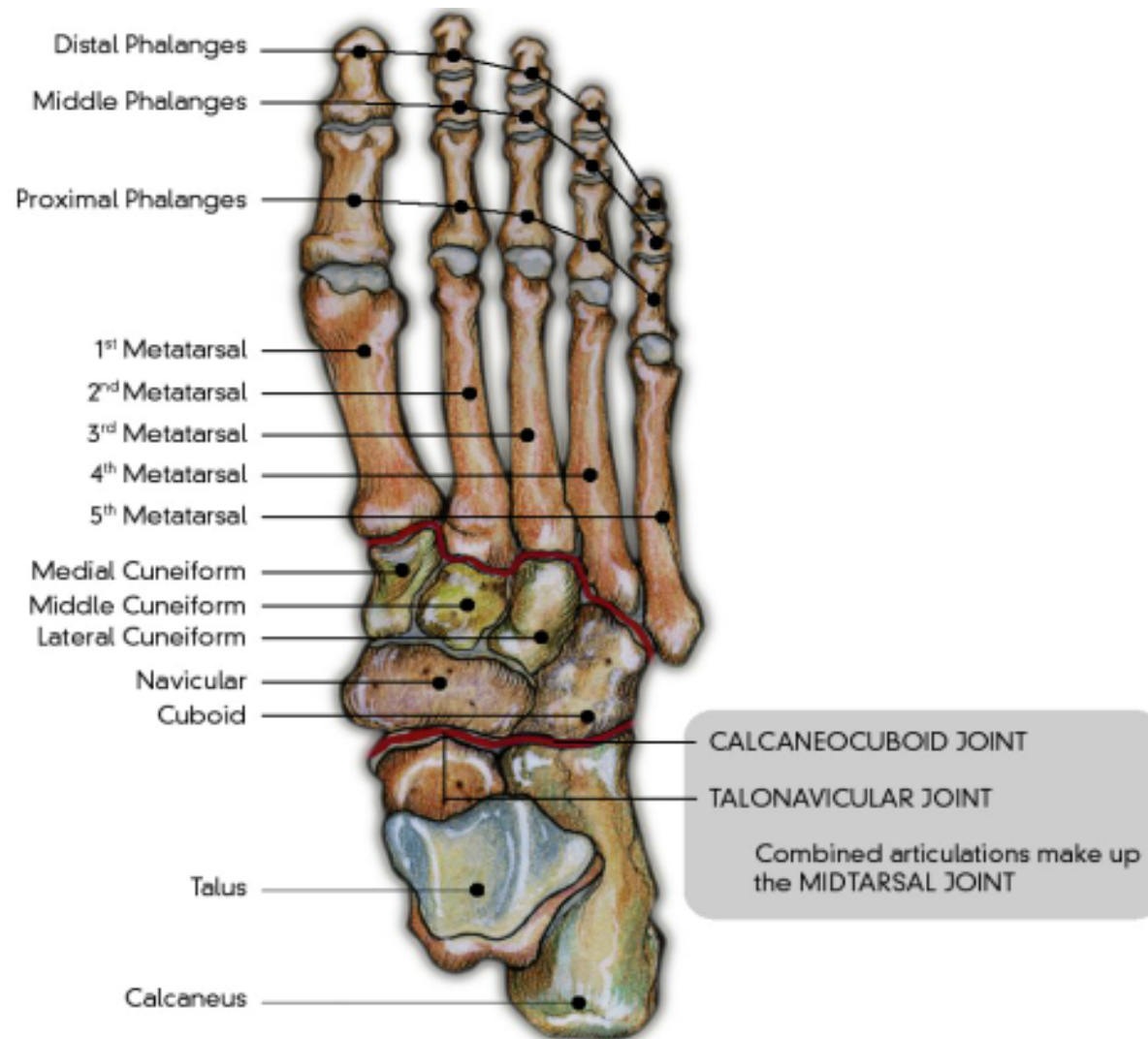
Lateral View, right foot

3) PHALANGES

There are 5 phalanges in our feet and one phalange consists of three parts;-

- 1) Proximal
- 2) Middle
- 3) Distal





Combined articulations make up
the MIDTARSAL JOINT

TALONAVICULAR JOINT

CALCANEOCUBOID JOINT

SUBTALAR JOINT

Medial Cuneiform (Not Visible)

Middle Cuneiform

Lateral Cuneiform

1st Metatarsal

Calcaneus

Navicular

Talus

Cuboid

2nd Metatarsal

3rd Metatarsal

4th Metatarsal

5th Metatarsal

Distal Phalange

Middle Phalange

Proximal Phalange

Lateral View, right foot

PREPARATION FOR MEASURING

- For taking the measurements, use a good quality measuring tape which is stiff and will not stretch.
- The measurements should be taken over a smooth fitting foundation garment and never over bulky garments.



LADIES BODICE MEASUREMENTS



Bust: Measure around the fullest part of the bust raising the measuring tape slightly to a level just below the shoulder blades at the back.

Waist: Measure snugly around the waist (where you tied the cord) keeping the tape parallel to the floor.

Neck: Measure around the neck, passing the tape just above the collar bone in front and along the base of the neck at the back.

Shoulder: Measure from the neck joint to the arm joint along the middle of the shoulder (A to B in Fig.1 .1 a).

Front waist length: Measure down from neck at highest point of shoulder to waist line through the fullest part of the bust (A to C in Fig.1 .1 a).

Shoulder to bust: Measure down from highest point of shoulder to tip of bust (A to D in Fig.1 .1 a).

Distance between bust points: Measure in the horizontal direction, the distance between the two bust points (D to E in Fig.1 .1 a).

Back width or across back measurement: Measure across the back from armhole to armhole about 3 inches below base of neck (P to Q in Fig.1 .1b).

Back waist length: Measure from the base of neck at the centre back to waist line (R to S in Fig.1 .1b).

Armhole depth: Measure from base of neck at centre back to a point directly below it and in level with the bottom of the arm where it joins the body (R to T in Fig.1 .1 b).

SLEEVE LENGTH



- ✓ For short sleeve length, measure down from tip of shoulder at top of arm to desired length of sleeve (B to F in Fig.1 .1a).
- ✓ For elbow length sleeve measure from top of arm to elbow point (B to G in Fig.1 .1 a).
- ✓ For full length, bend the elbow slightly and measure down from top of arm to back of wrist passing the tape over the elbow point (B to H in Fig.1 .1 a).

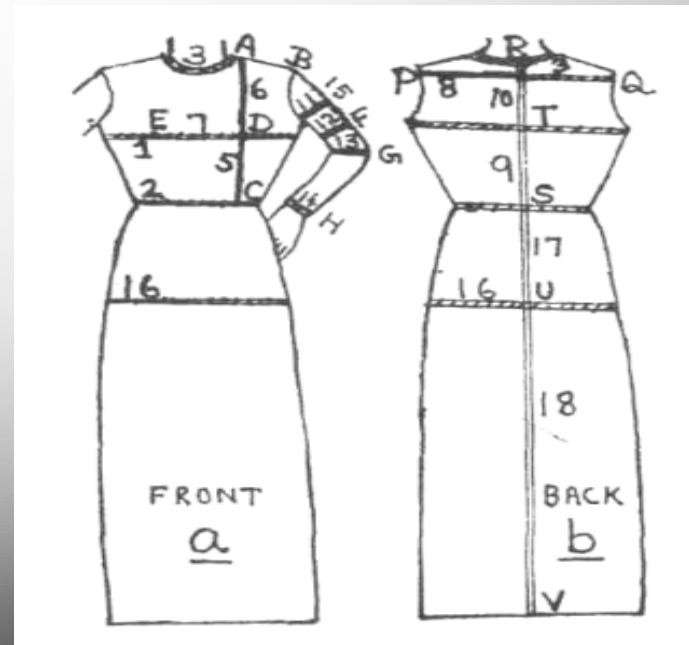
SKIRT MEASUREMENTS

Waist: Same as for bodice.

Hip: Measure around the fullest part or the hip horizontally. (This level will be about 7 to 9 inches below the waist for an average figure).

Waist to hip: Measure down from waist at centre back to fullest part of the hip (S to U in Fig.1 .1 b)

Skirt length: Measure down the centre back from waist to desired length of skirt (S to V in



BOYS AND MEN'S MEASUREMENTS



Many measurements are common for both women's garments and garments. In addition to women's measurements fewer measurements are required for men and boys garments. They are listed below:-

Shirt Length

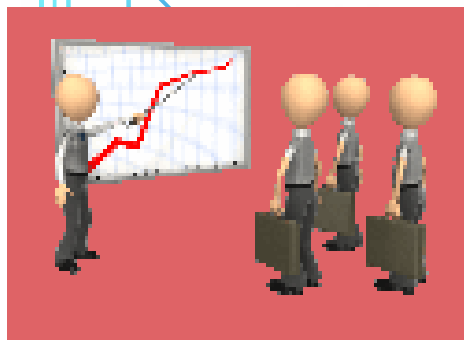
Shirt length should be measured from neck at highest point of shoulder to desired length along the front.

Pant Length

Pant length is measured from waist to ankle along with side of the body.

Cuff Measurement

Cuff measurement is estimated by measuring the wrist loosely and adding ½" overlap extension to it.

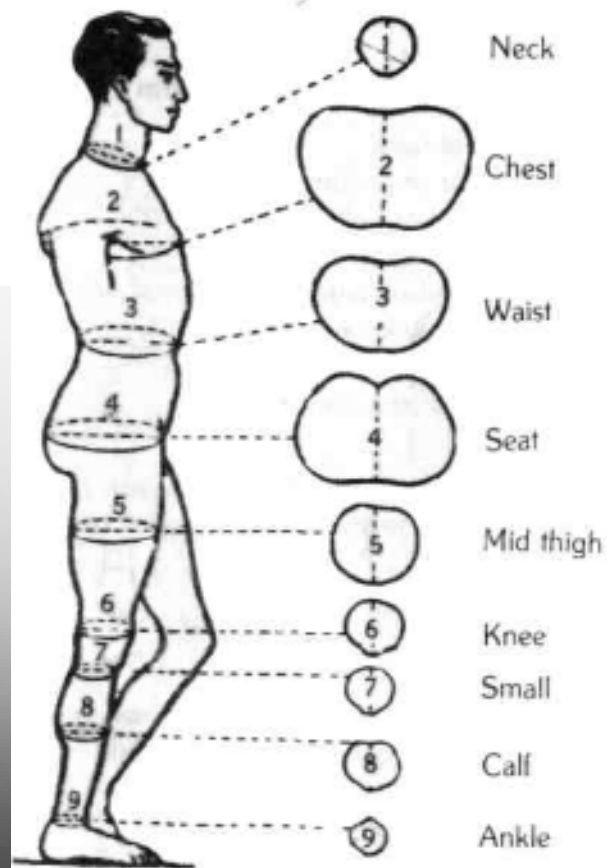


STANDARD MEASUREMENT

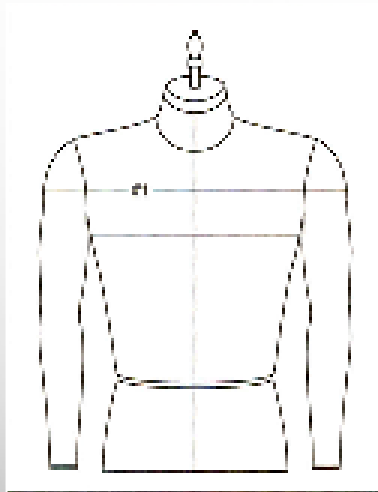
Standard Body Measurements
 The chart is compiled for High Street Fashion garments

Small - approx size 8-10
Medium - size 12
Large - approx size 14-16
X Large - size 18

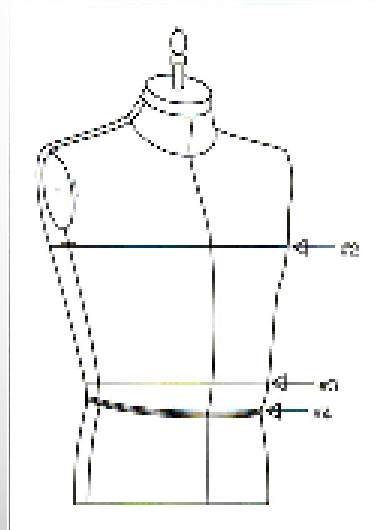
WOMEN OF MEDIUM HEIGHT 160cm, 170cm (5ft 2½ in - 5ft 6½ in)												
SIZE SYMBOL	8	10	12	14	16	18	20	22	24	26	28	30
BUST	80	84	88	92	97	102	107	112	117	122	127	132
WAIST	60	64	68	72	77	82	87	92	97	102	107	112
HIPS	85	89	93	97	102	107	112	117	122	127	132	137
BACK WIDTH	37.4	38.4	39.4	40.4	41.6	42.8	44	45.2	46.4	47.6	48.8	50
CHEST	30	31.2	32.4	33.6	35	36.3	38	39.5	41	42.5	44	45.5
SHOULDER	11.75	12	12.25	12.5	12.8	13.1	13.4	13.7	14	14.3	14.6	14.8
NECK SIZE	35	36	37	38	39.7	40.4	41.6	42.8	44	45.2	46.4	47.6
DART	5.8	6.4	7	7.6	8.2	8.8	9.4	10	10.6	11.2	11.8	12.4
TOP ARM	26	27.2	28.4	29.6	31	32.3	34.4	36	37.8	39.6	41.4	43.2
WRIST	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20	20.5
ANKLE	23	23.5	24	24.5	25.1	25.7	26.3	26.9	27.5	28.1	28.7	29.3
HIGH ANKLE	20	20.5	21	21.5	22.1	22.7	23.3	23.9	24.5	25.1	25.7	26.3
NAPE TO WAIST	39	39.5	40	40.5	41	41.5	42	42.5	43	43.2	43.4	43.6
FRONT SHOULDER TO WAIST	39	39.5	40	40.5	41.3	42.1	42.9	43.7	44.5	45	45.5	46
ARMHOLE DEPTH	20	20.5	21	21.5	22	22.5	23	23.5	24.2	24.9	25.6	26.3
WAIST TO KNEE	57.5	58	58.5	59	59.5	60	60.5	61	61.25	61.5	61.75	62
WAIST TO HIP	20	20.3	20.6	20.9	21.2	21.5	21.8	22.1	22.3	22.5	22.7	22.9
WAIST TO FLOOR	102	103	104	105	106	107	108	109	109.5	110	110.5	111
BODY RISE	26.6	27.3	28	28.7	29.4	30.1	30.8	31.5	32.5	33.5	34.5	35.5
SLEEVE LENGTH	57.3	57.8	58.4	59	59.5	60	60.5	61	61.3	61.8	62.6	63.8
SLEEVE LENGTH (OVERSHIRT) Extra measurements												
CUFF SIZE SHIRTS	21	21	21.5	21.5	22	22.5	23	23.5	24	24.5	25	25.5
CUFF SIZE TWO-PIECE SHIRTS												
SHIRT TROUSER WIDTH	13.25	13.5	13.75	14	14.25	14.5	14.75	15	15.25	15.5	15.75	16
JEANS BOTTOM WIDTH	21	21.5	22	22.5	23	23.5	24	24.5	25.4	26.2	27	27.8
JEANS BOTTOM WIDTH	18.5	18.5	19	19	19.5	20	20.5	21				



How to measure Upper Torso

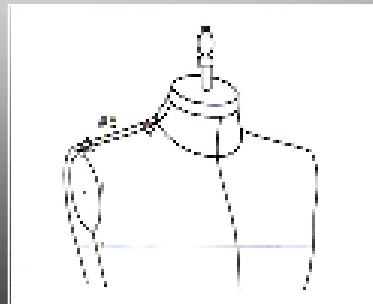


Total shoulder girth level

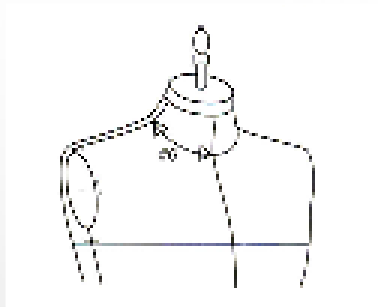


Total chest level

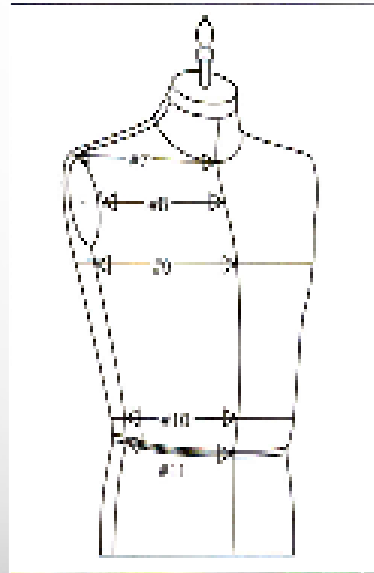
Total abdomen level
Total waist level



Shoulder seam

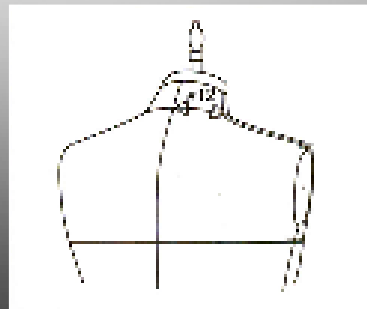


Half the front neckline

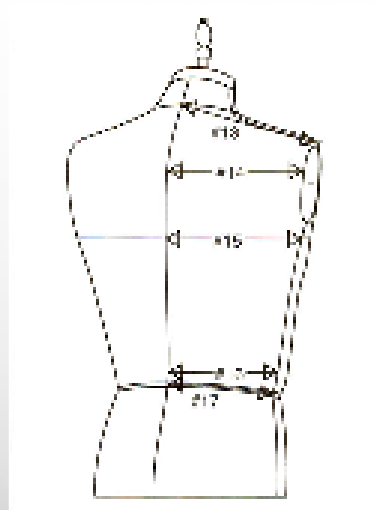


Center front neck to shoulder tip
Half the front to mid-armhole
Half the front chest

Half the front abdomen
Half the front waist

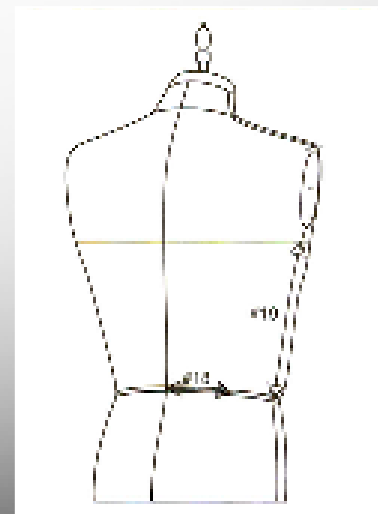


Half the back neckline



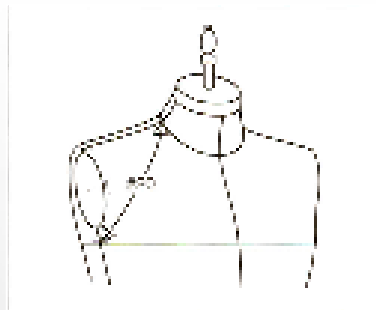
Center back neck to shoulder
 Halfway across shoulder blades
 Half the back chest

Half the back abdomen
 Half the back waist

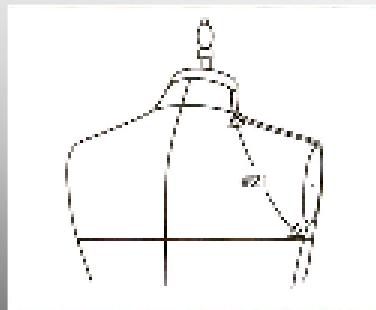


Side seam
 length

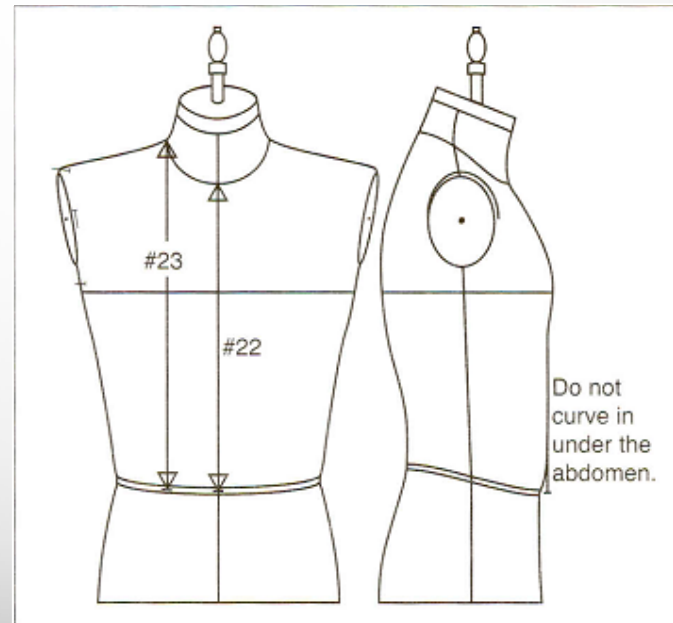
Dart placement



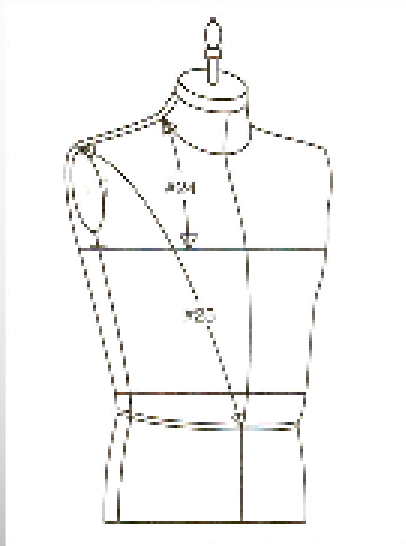
High neck point to front side seam



High neck point to back side seam

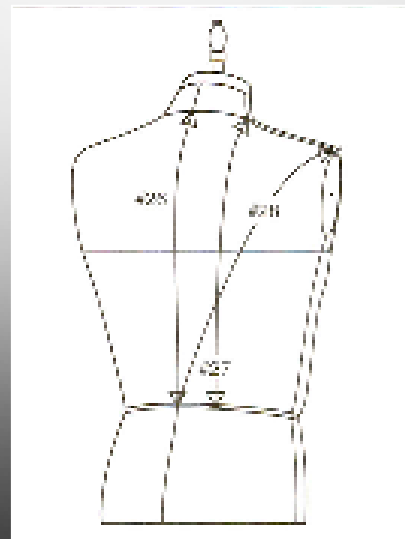


Front total length
Center front length



High neck point to front chest level

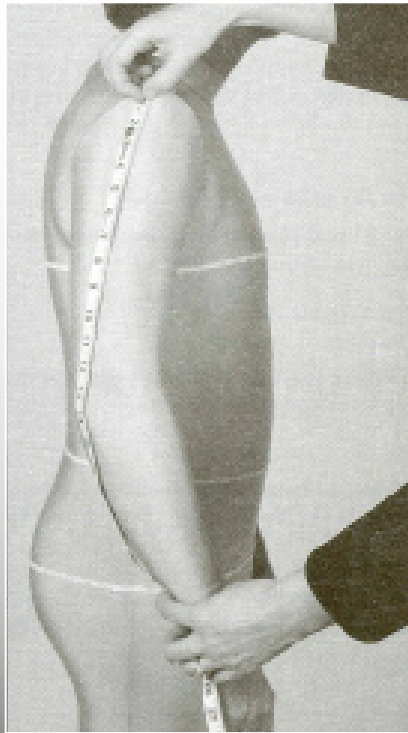
Shoulder tip to centre front waist



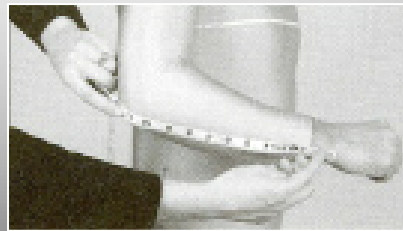
Center back length

Back total length

Shoulder tip to centre back waist



Total arm length



Forearm length

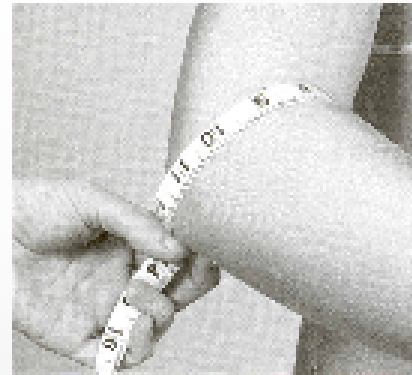


Underarm length

Biceps
circumference



Elbow
circumference

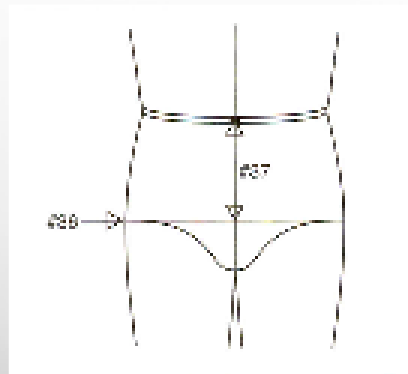


Wrist circumference



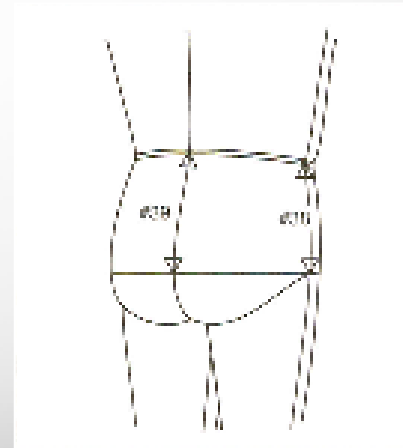
Hand circumference

Lower torso Measurement



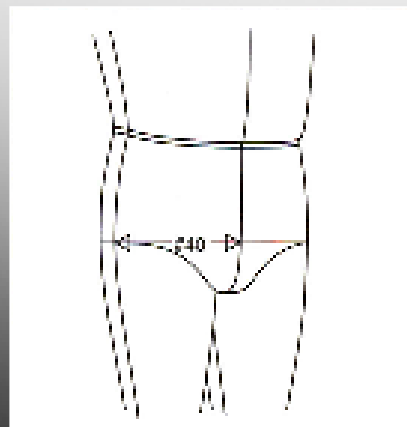
Total hip level

Hip depth at
center front

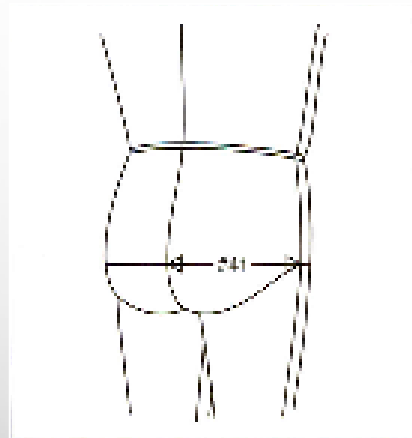


Hip depth at
side seam

Hip depth at
center back



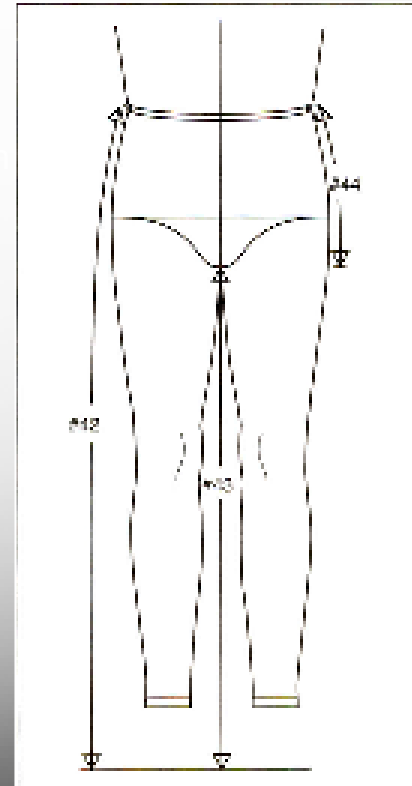
Half the front hip



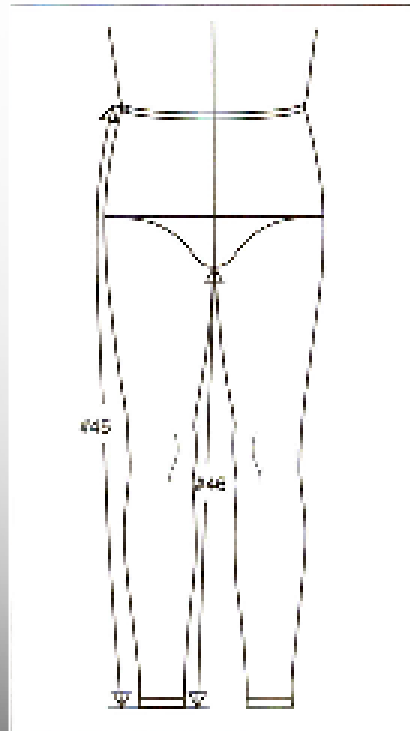
Half the back hip

Out seam / side seam to floor

Inseam to floor

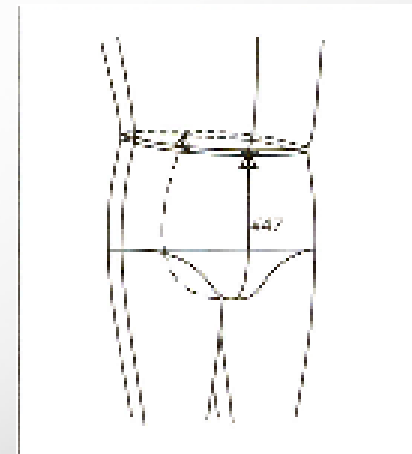


Crotch depth

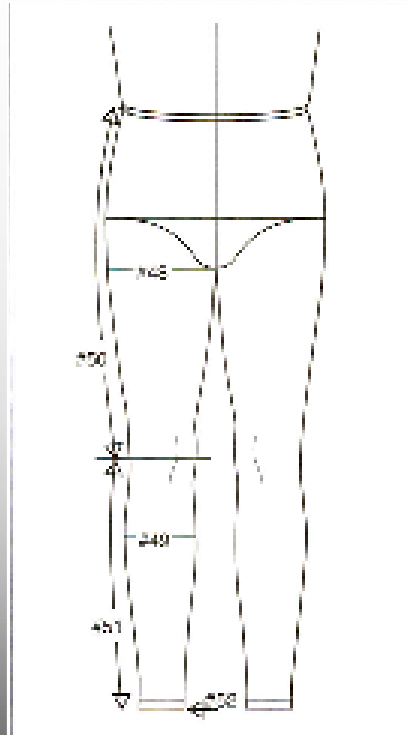


Outseam to ankle

Inseam to ankle



Crotch length



48. Total thigh circumference

49. Total calf circumference

50. Knee level from waist

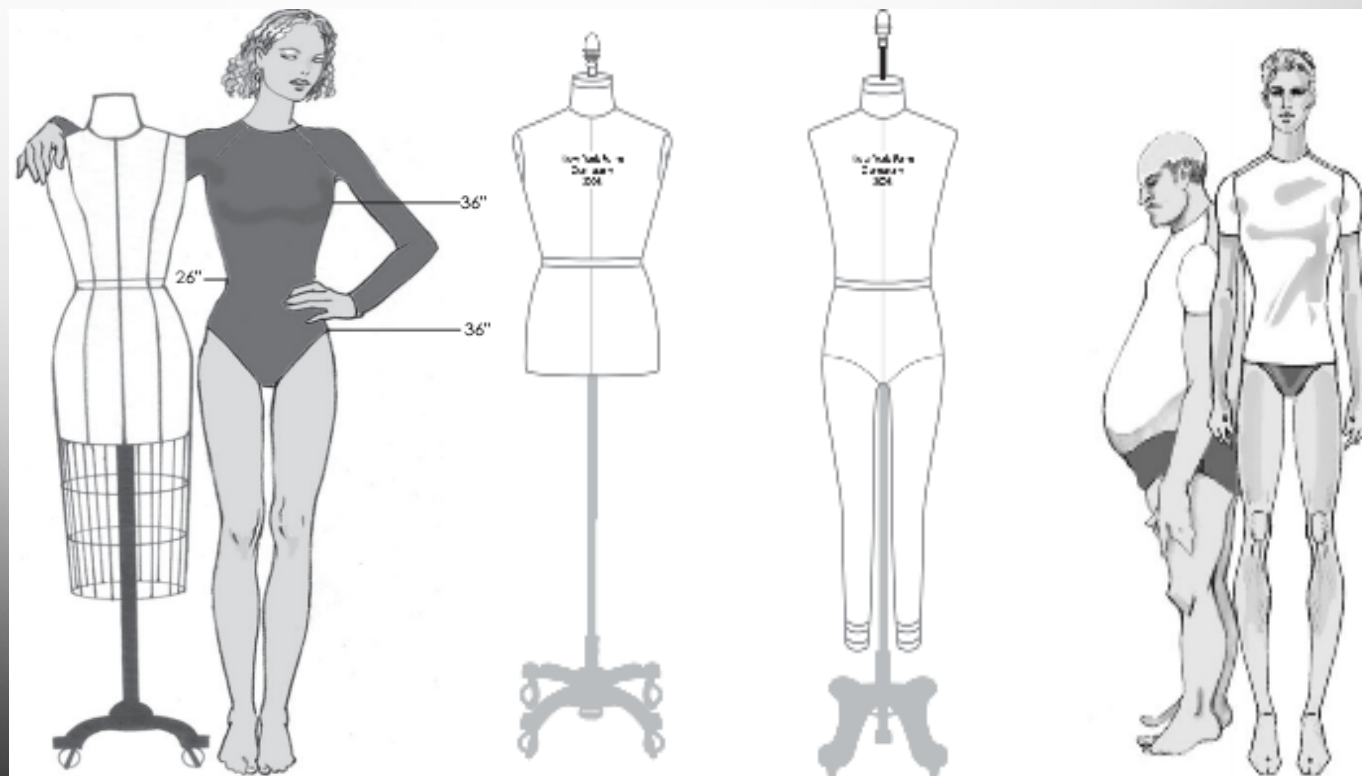
51. Knee level to ankle level

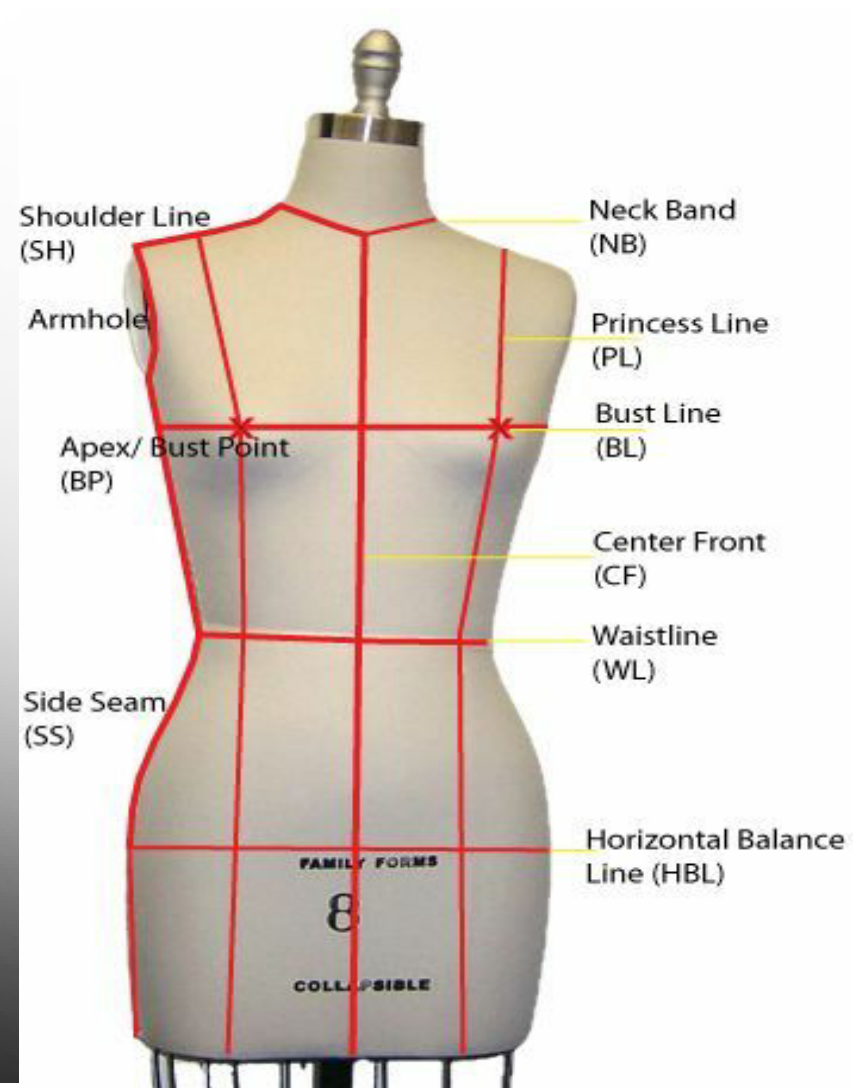
52. Total ankle circumference



Foot circumference

STANDARD IDEAL FIGURE





1. Center front neck
2. Center front waist
3. Bust points
4. Center front bust level (between bust points)
5. Side front (princess)
Side back (princess)
6. Mid-armhole front or Mid-armhole back (at level with plate screw)
7. Shoulder tip
8. Shoulder at neck (shoulder/neck)
9. Armhole ridge or roll line
10. Plate screw
11. Armhole plate

