Chapter 2

Basic Pattern Development

Introduction

Pattern making is an extensive subject which covers principles of constructions and techniques in a wider sense rather than style detail in narrow sense. It opens up the scope for an infinite variety of styles both for regular designs and fantasy patterns. Pattern construction can be divided in two parts: measuring correctly & knowledge of technique with which they are applied. Learning pattern making by trial and error is like learning to play music by ear.

This is a method where in body or dress form measurements are taken for developing a pattern. Following a logical stepwise procedure, the measurements are then converted into a pattern. In other words this system depends on accurate measurements to complete the paper pattern. Limitless designs can be achieved for practical garments. Flat pattern making should be done in conjunction with a dress form so that as the design evolves, the proportion and balance of the garment can be checked side by side. It is important to transfer the pattern on to a muslin toile (pronounced as 'twall') to test the fit, on a dress form or a human figure. Flat pattern cutting is now widely used because of its accuracy of sizing and the speed with which complicated designs can be made.

Basic Preparation

Prior planning and clarity is necessary for the performance of the exercises.

Read handouts, appropriate lab manuals and textbooks before performing for the practical. Follow all precautions and regulations while working in the lab.

Listen carefully to any introductory remarks and experimental procedure given by your teacher.

Make sure that your working space is clean and organized, and all the required stocks and materials are kept ready.

Maintain the discipline in your working area.

Recording Results

Results should be recorded in the recommended record/file neatly and legibly with great care. The record of exercises may be done in the following headings:

1 Introduction/Aim

State precisely the purpose and objectives of the practical in two or three sentences.

2. Materials and methods

The requirements like equipment, materials, etc. should be given here. Besides, methods should also be described along with principles of the techniques used.

3. Sample / Results

The paper pattern corrected after test fitting should be labeled, neatly folded, placed in a transparent envelope and attached here.

Things to be included on a pattern are:-

- Grain line
- Centre Front or Centre Back
- Style number or code number of the pattern set may be evolved e.g. AB 01 here AB identify type of the garment and 01 identify the piece number of complete set. If there are 5 pattern pieces in a garment, the pieces will be numbered as AB 01, AB 02, AB 03, AB 04 and AB 05.
- Pattern piece e.g. skirt front, skirt back, side front etc.
- Size as 32, 34, 36, or S, M, L etc.
- Cutting information - It should be clearly mentioned as to how many pieces are to be cut e.g. Cut 1, Cut 2, Cut on fold.
- Notches - Marks that are needed to help assemble garment sections correctly.
- Directional Fabrics - For fabrics which have designs in one direction such as floral print, stripes, plaid, velvet, fur etc. A symbol "cut one way" or (?) is indicated on the pattern.
- Date - Indicated as a reference point.
- Seam Allowances.

Seam Allowances

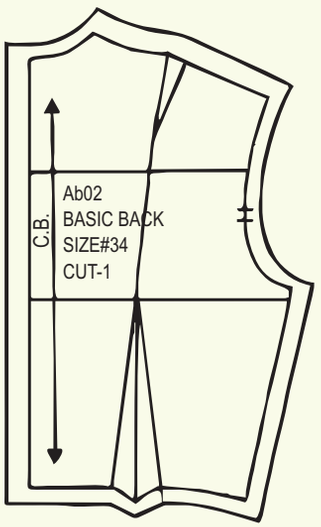
The amount of seam allowance required for each seam line may vary depending on the location and end purpose. Generally these are the measurements followed -

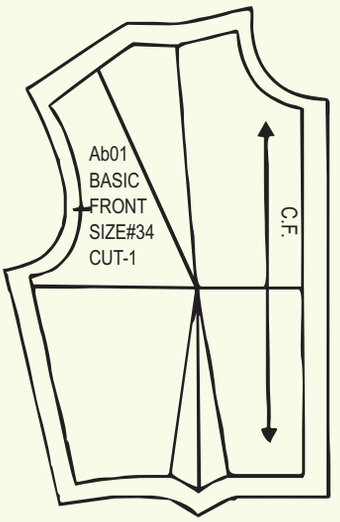
¼" for sharp curves

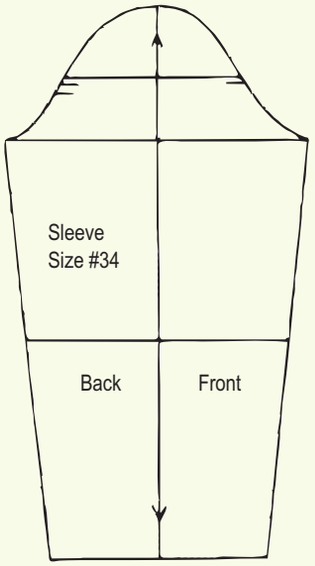
½" for neckline, armhole, waistline, style line.

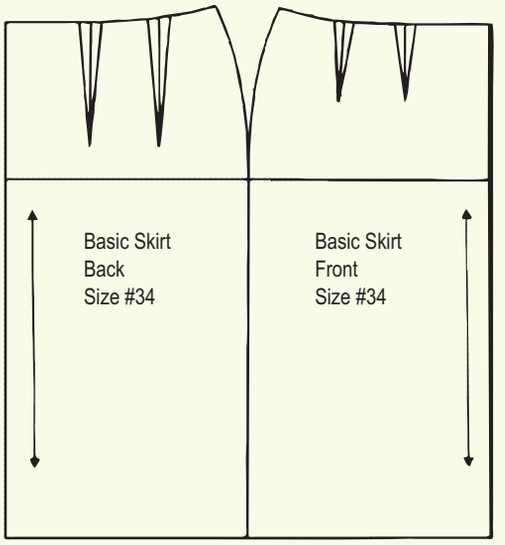
1" for side seam, centre line, shoulder, plackets.

2" for straight hem line.









Symbols and abbreviations

Centre Front	-	CF
Centre Back	-	CB
Grain line	-	↕↔
Notches	-	⊤∏< ц
Buttons	-	Θ
Button hole	-	|—|
Front	-	F
Back	-	B

Waist line	-	Wl
Arm hole	-	Ah
Side Seam	-	SS
Neck line	-	NI
Shoulder	-	Sh
Two way grain line	-	↕
One way grain line	-	↓ ↑

4. Discussion and Conclusions

   The test fits should be interpreted and conclusions be drawn after discussing with your teacher.

5. References

   Reading materials that were consulted for the experiment be given as reference (e.g. your lab manual) along with the name of the author and the book, pages referred and year of publication.

Safety rules in the laboratory

- Safety is important to everyone and it is ones responsibility to maintain a safe working place.
- When in doubt, ask the teacher.
- Report any injuries or accidents immediately to the teacher.
- Keep the work station clean with all tools in the tool kit.
- Turn off the iron at the end of the class.
- Always place the iron on the iron pad to avoid burning the ironing board cover.
- When trimming or cutting, put all trimmings & paper in the wastebasket.
- Scissors should be handed to another person with the handles toward the person.
- Never toss or throw scissors or equipment.
- Do not eat or drink in the work area.

PRACTICAL EXERCISE - 5

Objective

To develop a **basic bodice block** and test fit the same

Principles

A 'block' normally represents the dimensions of a specific form or figure. It has darts to fit to the contours of the body but no other design features. It is a foundation that is used to make the pattern for a design and has no seam allowances.

It is important that the correct block is chosen for the design; this not only saves time during adaptation but can affect the final shape. The basic blocks can be drafted to fit individual figures by using personal measurements instead of the standard measurements listed in the size chart.

Requirements

Pattern paper, muslin and tool kit

Procedure

1. To develop pattern for basic Bodice for womens wear, use measurements from the given chart (ref Annexure II) or measure a dress form or a body. Cut a paper, whose length is front length plus 3" and width is half of the bust width plus 4" on fold.

2. Fold the paper lengthwise and with fold on the left hand side mark a guideline 1" down from the top edge, mark A as illustrated.

   A to B = front length

   A to C = B to D = front width (+1/2"ease to be added if measured on dress form/body)

   Join C to D

   Mark D to E = centre front length

   CE is front neck depth.

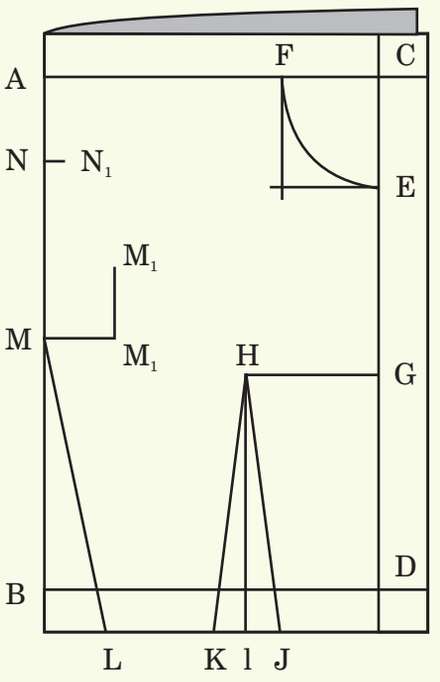
   For neck width mark CF = CE - 1/8"

   Square out lines from these points.

   Draw the neckline curve as illustrated, using a French curve.

   G = mid point of DE

   GH = apex measurement



Square a line from H to I

Mark DJ = Centre front to princess line measurement

I K = I J, Join J and K to H

KL = Front waist line measurement minus DJ (+1/8"ease to be added if measured on dress form/body)

LM = under arm seam length. Join as illustrated

M to M1 = M1 to M2 = 2½" square out, as illustrated

B to N = Shoulder to waistline measurement (+3/4"ease to be added if measured on dress form/body)

N to N1 = ½"

Draw the front armhole curve as illustrated

Join F to N1

Mark F to F1 and N1 to O = ½ shoulder measurement

Join F1 to H and O to H.

Trace BD line, L M line and M M1 line on the other half of the paper.

Extend M M1 line on the second half of the paper.

Mark B to Z = Back width (+1/2"ease to be added if measured on dress form/body)

Z to Y = Centre Back Length

Y to X = C F

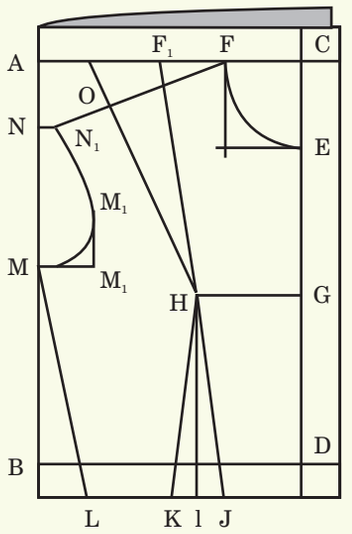
X to W = 7/8", draw the back neck line curve as illustrated.

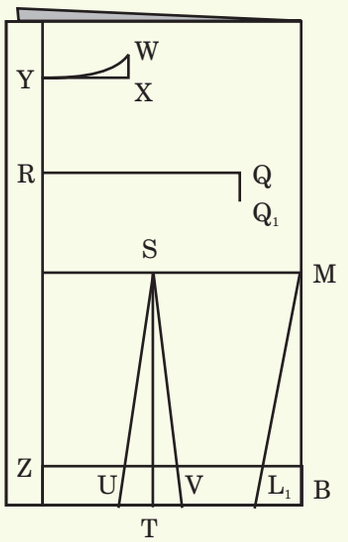
Measure Z to L1 and from this subtract back waistline measurement (+1/8"ease to be added if measured on dress form/body).

The difference should be taken as dart intake at U.

Z to U = Centre back to princess line measurement.

Mark U to V = Dart intake, T is mid point of U and V





Square out from T to S, Join S to U and V.

Mark Y R = ¼ Centre back length

R Q = Back shoulder blade measurement.

QQ1 = Draw 1" guideline, as illustrated.

Join W to N1 in front

W to P = ½ shoulder + 1/8"

P to P1 = ¾"

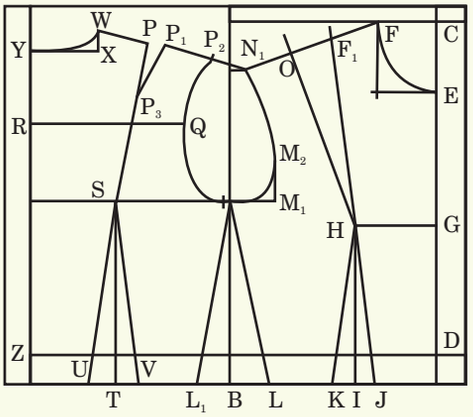
P1 to P2 = W to P (½ shoulder + 1/8"

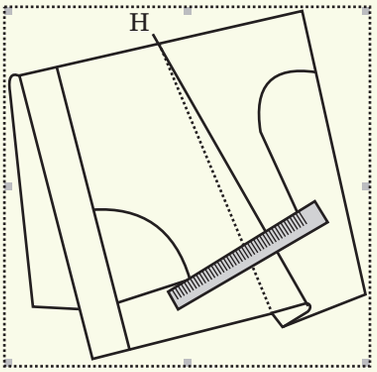
Join P to S.

Join P1 to P3 such that P3 is 1"above the shoulder/blade line (RQ).

Draw the armhole as illustrated.

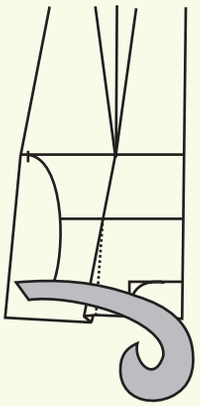
Truing or correcting the lines or darts to conform to body shape or aligning the dart legs and seams.





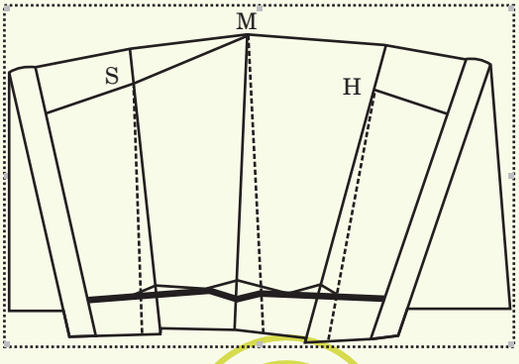
Front shoulder

Fold the shoulder dart at the apex, matching the two dart legs keeping the folded edge towards the neckline. Join the neck edge with the armhole edge with the straight line at the dart ends. Use a tracing wheel to trace out the folded edge.



Back shoulder

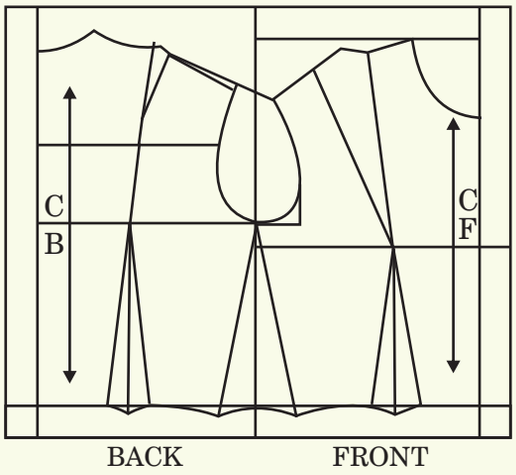
Fold the shoulder dart matching the two dart legs keeping the folded edge towards the neckline. Draw the shoulder line with the help of the French curve as illustrated, dropping 1/8" on the armhole edge.



Waist line

Fold both the waist line darts (by matching the dart legs) and also close the side seam, keeping the pattern folded at the apex line.

True the waist with help of a French curve, blending the waist line darts and side seam. The side seam should be dropped ¼"at the side



FINISHED PATTERN

Observations

1. You are required to test fit the developed Bodice block and check the fit on muslin.
2. Make necessary changes if any and make the final pattern.

Viva questions

1. What are the important measurements for development of bodice block?
2. How do you ensure that the bodice is fitting well?

PRACTICAL EXERCISE - 6

Objective

1. To develop bodices with different dart placement through dart manipulation
2. To test fit the same.

Principles

Dart manipulation is a useful tool for the pattern maker to create interesting, innovative dart placements and style lines.

The change in the position of the darts creates interest in the garments in different dart positions.

The same can be magnified by using similar technology on striped fabrics where darts can give a new dimension to the striped patterns.

Darts can be stitched as new darts, as style lines, can be converted into tucks, pleats, gathers, yokes, etc.

The basic fit of the garment is not altered by these manipulations.

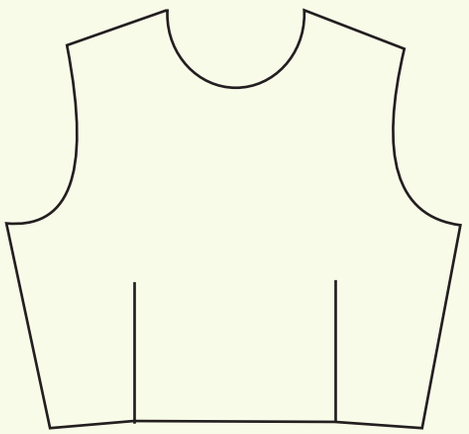
Requirement

Pattern paper, muslin and tool kit

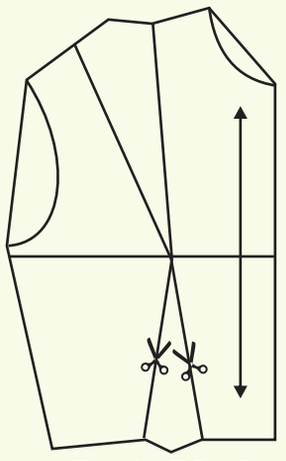
Procedure

SLASH AND SPREAD METHOD

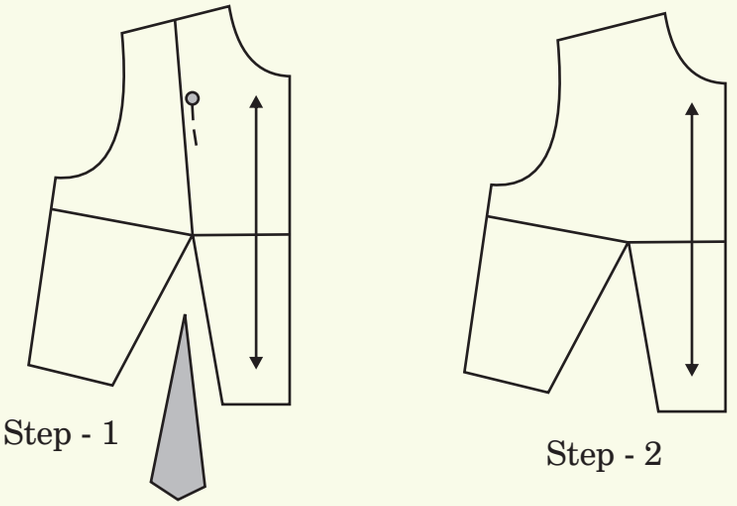
In the Slash and Spread method, as the name implies, the pattern/sloper is slashed or cut on the desired line and as the old dart or excess or is closed, the pattern itself spreads on the new position to create the new design. Some of the new dart positions are illustrated here:



Design



Basic Block

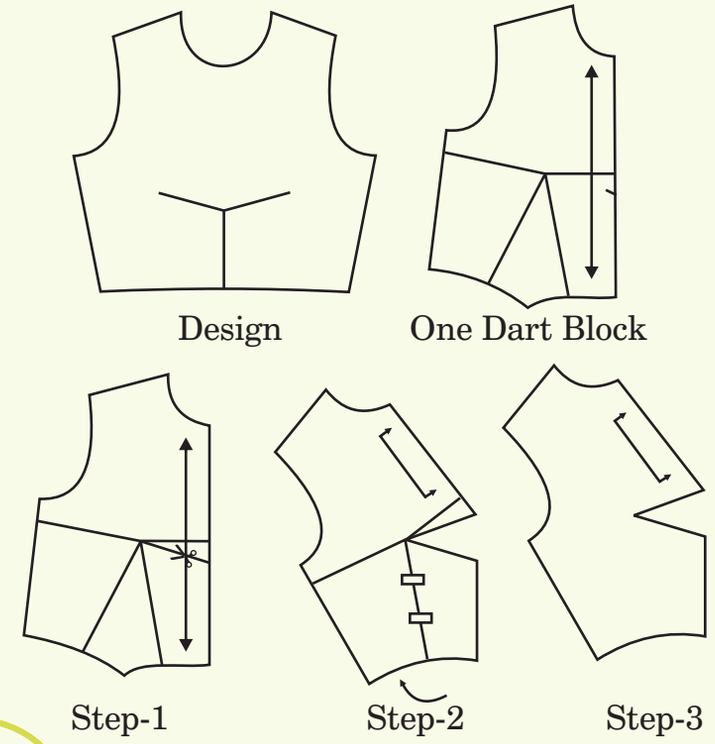


1. Shoulder dart to waist

Take two dart basic block, slash the new dart position i.e. the waist dart. Fold and close the shoulder dart. Trace the new pattern on separate sheet.

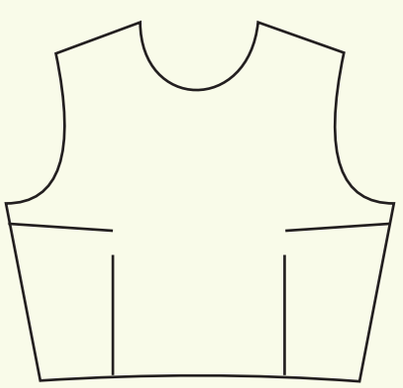
2. Waist dart to centre front

Take one dart bodice block. Slash the new dart position, close the old dart. Trace the pattern on separate sheet.

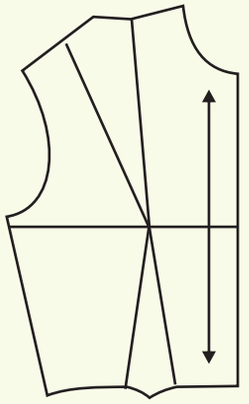


3. Shoulder dart to armhole side seam intersection

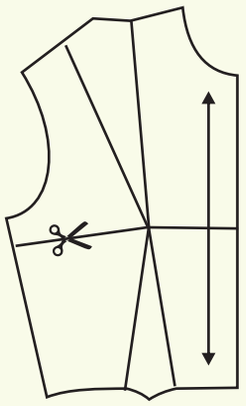
Take two dart basic bodice block. Slash the new dart position, close the old dart. Trace the pattern on separate sheet. Shoulder dart to armhole side seam intersection.



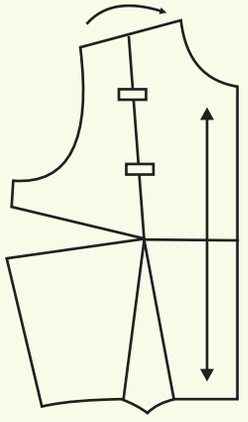
Design



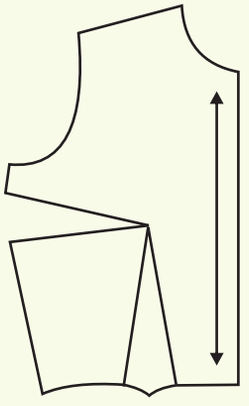
Basic Block



Step-1



Step-2



Step-3

Observations

You are required to test fit the developed dart manipulations and check the fit on muslin. Make necessary changes if any.

Viva questions

1. Why is dart manipulation important?
2. What are the things to be kept in mind while using slash and spread method?
3. Does the garment fit as well as the basic block if not what could be the reasons?

PRACTICAL EXERCISE -7

Objective

To develop a basic skirt and test fit the same

Principles

The basic skirt falls straight downward from the widest part of the hipline. The key to a balanced pattern and garment lies in the accurate placement of the balance line on the dress form and pattern. Any deviation of the balance line between the front and back skirt at the side seam will create fitting problems.

Requirements

Pattern paper, muslin and tool kit

Procedure

To develop pattern for basic skirt for women wear use measurements from the given chart or measure a dress form or a body. Take a paper, whose length is desired length of the skirt plus 3" and width is half of the round hip plus 4".

Make a block A B C D E F, where

A to B = back hip (+1/4"ease to be added if measured on dress form/body)

B to C = front hip (+1/4"ease to be added if measured on dress form/body)

A to D and C to F = Desired length, e.g. 21".

A to G = C to H = 7", hip level

Joint G to H. Mark I at side seam

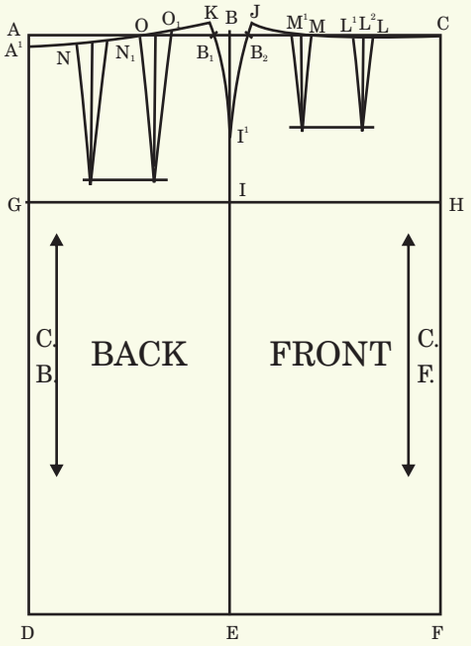
B to B1 and B to B2 = ¾"

Mark I1, 2" above I.

Passing through B2 and B1, join I1 J and I1 K extending it 3/8" above the waistline, as illustrated using hip curve.

A to A1 = ¼"

Join J to C, K to A1 as illustrated, using hip curve.



Measure J to C, K to A1 and note the measurement on paper, from this measurement subtract the front and back waistline measurement respectively.

The difference is the dart intake for both front and back.

Divide this excess into two darts for both front and back.

Draw a guide line parallel to the waist line at a distance of 3½" for front and 5 ½" for the back,

Mark C to L = Centre front to princess line measurement

L to L^1 = 1st dart (½ of the total dart intake for front)

L^2 is mid point of L, L^1.

L^1 to M = 1 ½"

M M^1, = 2nd dart (½ of the total dart intake)

Mark A^1 N = Centre back to princess line measurement

N to N^1 = 1st dart (½ of the total dart intake for the back)

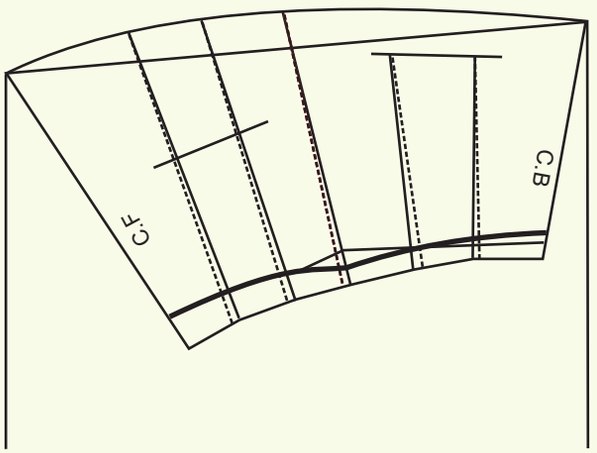
N^1 O = 1 ½"

O to O^1 = 2nd dart (½ of the total dart intake)

Find the mid-point of all the darts and draw a perpendicular line till the guideline. Join these points to the dart point to form the dart legs.

Trueing

Fold the dart at vanishing point and true the waistline as illustrated raising the waistline by ¼" -½" (when you true the waistline with the help of French curve it automatically goes up) at the side seams. Drop back waist line by 1/8" at centre back.



Observations

1. Test fit the developed skirt block.
2. Make necessary changes if any and make the final pattern

Viva questions

1. What are the important measurements for development of skirt block?
2. How do you ensure that the skirt is fitting well?

PRACTICAL EXERCISE -8

Objective

To develop style variations in skirt and test fit the same.

Principles

Variations in skirt can be treated through dart manipulation which you have learnt earlier. It is a useful and interesting method for creating interesting, innovative style lines. The change in the position of the darts creates new styles like an A-line skirt and flared skirt. The suppression of the darts is converted into fullness at the hem. The basic fit of the garment is not altered by these manipulations.

Requirements

Pattern paper, muslin and tool kit

Procedure

1. One dart basic skirt

Use a basic skirt sloper that has two darts. Measure the dart towards the side seam and add the measurement to the 1st dart i.e. towards the centre front or back and eliminate the 2nd dart. Note that the length of new waistline dart in the front is 5 ½"same as the back dart length. Find the mid-point of the new dart and mark the centre and true the waistline. This method is called measurement method and can only be used in skirts/trousers, as there is no apex in lower half of the body.

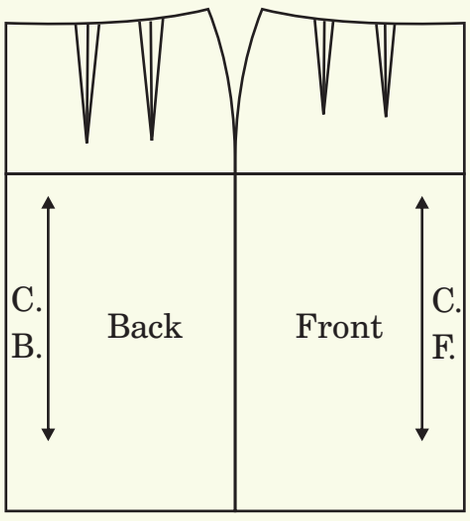


Fig.1

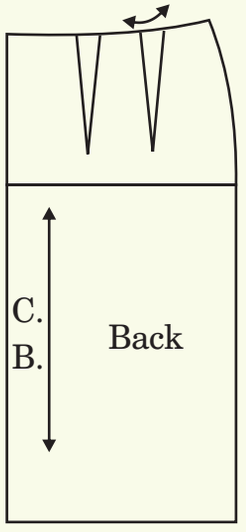


Fig.2 (a)

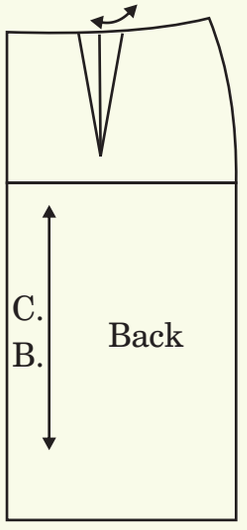


Fig.3 (a)

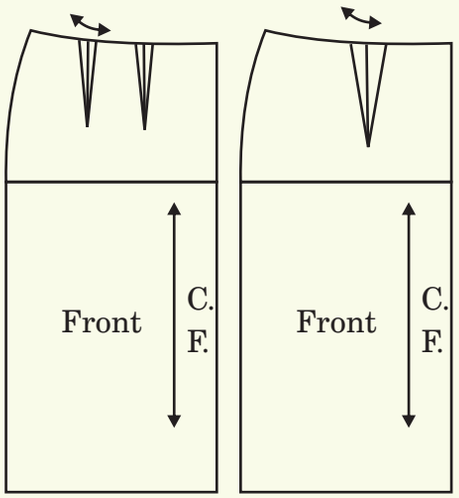


Fig. 2(b)

Fig. 3(b)

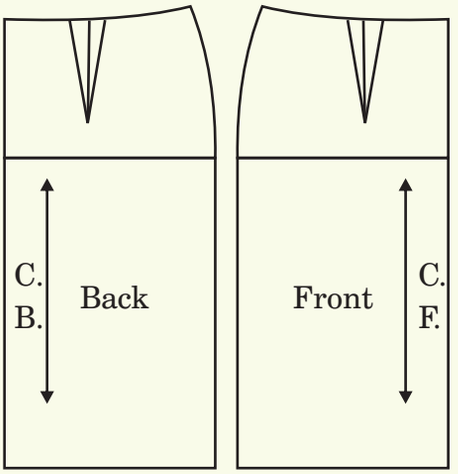


Fig. 4

One Dart Basic Skirt

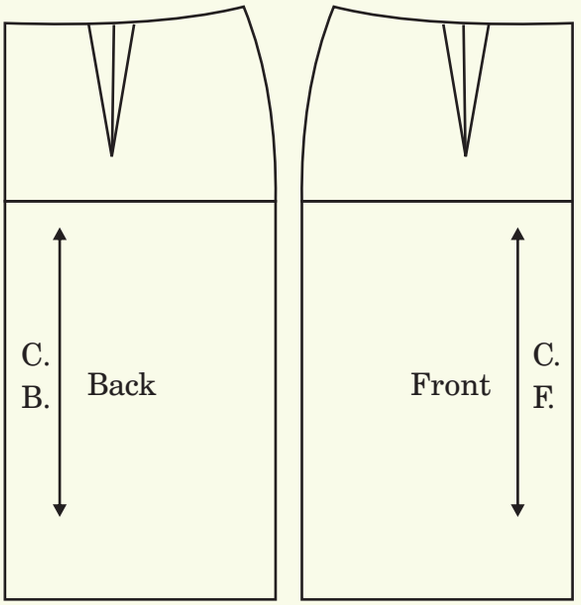


Fig. 1

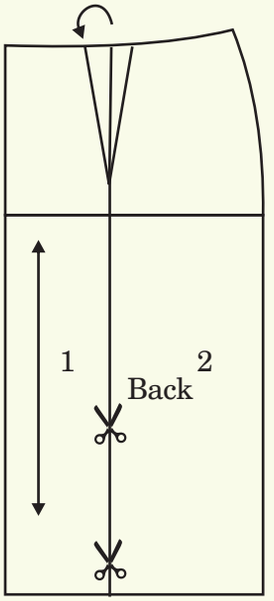


Fig. 2

2. A-Line

1. Take a one dart skirt sloper and draw a slash line as illustrated (fig.2).
2. Slash the line and close a part of the waist dart, so that the ease is shifted to the hem.
3. Add 1" - 1 ½" on the side seam at hem line for A-line shape in the skirt as illustrated.
4. Blend till the hip level for both front and back and also blend the waistline.

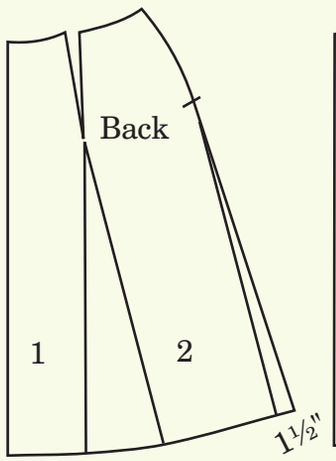


Fig. 3

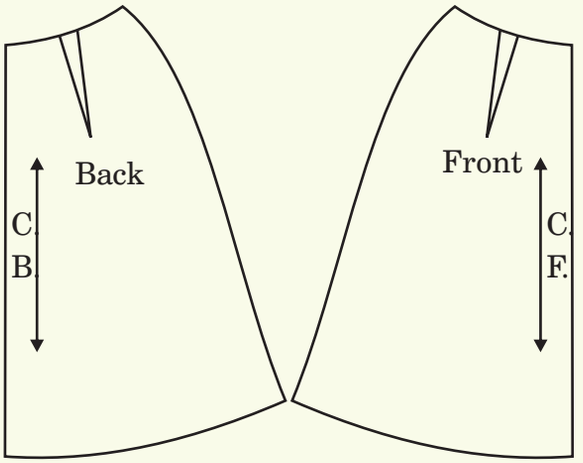


Fig. 4

A-Line Skirt

Observations

You are required to test fit the developed skirt variation and check the fit on muslin. Make necessary changes if any.

Viva questions

1. How is measurement method used for converting two dart skirt sloper into one dart skirt sloper? Is it ineffective for dart manipulation in bodice and why?
2. Which other skirt design variations are possible through dart manipulation?

ANNEXURE - I

Tool Kit

All pins	:	Fine, long, rust proof pins.
Carbon paper	:	Coated paper on one side with white or coloured wax, used to transfer marking on fabric or paper.
Dress form	:	A standardized duplication of a human torso, cotton padded and canvas covered, set on a movable, light adjustable stand and compressible shoulders and slopers. For taking measurements, developing pattern, fitting garment samples, to alter garments to establish style lines for the garment.
Grading scale	:	2" X 18" transparent straight plastic with grid
L-square	:	Plastic or metal ruler with two arms at right angles of varying lengths usually 12" and 24" to square off corners. Establish perpendicular lines, reference points and lines.
Magnet	:	A high carbon alloy steel that has a property of attracting iron and steel can be of any shape.
Measuring tape	:	Metal tipped narrow, firmly woven double tape of cloth or plastic usually 60" long (150cm) marked with both inches and centimeters.
Muslin	:	A plain weave fabric made from bleached or unbleached yarns to test fit and develop patterns.
Newsprint paper	:	Used for rough drafts.
Paper shears/scissors	:	A cutting instrument, ranging in size from 8" to 12", with two sharply pointed straight blades.
Pattern paper	:	Strong white paper available in variety of weights and widths.
Pencil	:	To mark lines in developing the muslin, pattern or sloper.
Pin cushion	:	A small firmly stuffed pillow made in a variety of shapes and sizes.
Push pins	:	Drum shaped 1/2" long pin for pivoting and transferring points & to hold pattern pieces and fabric on table.

Scale	:	Long ruler 12" / 24" metal or plastic.
Tailors shears	:	A cutting instrument ranging in size from 12" to 16" with two wide blades for cutting fabric and muslin.
Thick brown paper	:	Strong brown papers for finished pattern. Used for preliminary patterns drafting and development of the final pattern.
Tracing wheel	:	An instrument with small serrated or needle point wheel mounted on one end of a handle for transferring markings from paper patterns on the muslin.
Transparent tape	:	A clear plastic narrow continuous stripes with an adhesive surface on one side, available in roll. Used to hold paper pieces and mend tears.

ANNEXURE - II

STANDARD DRESS FORM MEASUREMENT CHART FOR BODICE & SKIRT

(in inches)

SIZES	32	34	36	38	40	42	44
FRONT LENGTH	17 1/4	17 1/2	17 3/4	18	18 1/4	18 1/2	18 3/4
WIDTH OF BUST (1" below arm plate includes an ease of ½")	9 1/2	10	10 1/2	11	11 1/2	12	12 1/2
CENTRE FRONT LENGTH	14 3/8	14 1/2	14 5/8	14 3/4	14 7/8	15	15 1/8
APEX	3 5/8	3 3/4	3 7/8	4	4 1/8	4 1/4	4 3/8
UNDER ARM SEAM	7 7/8	8	8 1/8	8 1/4	8 3/8	8 1/2	8 5/8
FRONT WAISTLINE (includes an ease of ¼")	6 3/8	6 3/4	7 1/8	7 1/2	7 7/8	8 1/4	8 5/8
WAISTLINE TO SHOULDER (includes an ease of ¾")	14 3/4	14 7/8	15	15 1/8	15 1/4	15 3/8	15 1/2
SHOULDER LENGTH	4 7/8	5	5 1/8	5 1/4	5 3/8	5 1/2	5 5/8
CENTRE FRONT TO PRINCESS LINE	2 5/8	2 3/4	2 7/8	3	3 1/8	3 1/4	3 3/8
WIDTH OF BACK (1" below arm plate includes an ease of ½")	8 1/2	9	9 1/2	10	10 1/2	11	11 1/2
CENTRE BACK LENGTH	16 1/2	16 3/4	17	17 1/4	17 1/2	17 3/4	18
BACK WAIST LINE (includes an ease of ¼")	5 5/8	6	6 3/8	6 3/4	7 1/8	7 1/2	7 7/8
SHOULDER BLADE	6 7/8	7	7 1/8	7 1/4	7 3/8	7 1/2	7 5/8
CENTRE BACK TO PRINCESS LINE	2 1/2	2 5/8	2 3/4	2 7/8	3	3 1/8	3 1/4
FRONT HIPLINE (7" below waistline)(includes an ease of ¼")	9 1/8	9 3/8	9 5/8	9 7/8	10 1/8	10 3/8	10 5/8
BACK HIPLINE (7" below waistline) (includes an ease of ¼")	9 1/8	9 3/8	9 5/8	9 7/8	10 1/8	10 3/8	10 5/8
CAP HEIGHT	6	6	6	6	6 1/8	6 1/8	6 1/8
SHORT SLEEVE LENGTH	9	9 1/4	9 1/2	9 3/4	10	10 1/2	10 3/4
SLEEVE LENGTH	23	23 1/2	24	24 1/2	24 1/2	25	25

ANNEXURE - III

Test Fitting

Steps of test fitting are as follows:

1. Muslin is usually used as test material
2. The quickest way to get the effect of the finished garment without actual stitching is to overlap and pin all the seams lines. Pinning gives the same result and information, that one wants without going to the machine. It is so much faster and easier to unpin and then re-pin than to rip stitching and re-stitching.
3. Pins should be placed at right angle to the seam line, as in this method there is least amount of strain or pull on the seam, and it does not gape.
4. Check the test fit muslin and make correction till fully satisfied.
5. Mark the necessary corrections and the same should be transferred on the paper pattern for a final pattern of the garment.