

Find the Length of Your Pace:
 To use these charts, you must find the average length of your pace. To do this walk a measured distance (at least 100 feet) and count the number of paces you take. Convert the distance to inches and divide that by the number of paces you took. You may repeat this procedure using both an uphill and a downhill course.

Level	Uphill			Downhill		
Paces:	24"	25"	26"	27"	28"	29"
1	2.0	2.1	2.2	2.3	2.3	2.4
2	4.0	4.2	4.3	4.5	4.7	4.8
3	6.0	6.3	6.5	6.8	7.0	7.3
4	8.0	8.3	8.7	9.0	9.3	9.7
5	10.0	10.4	10.8	11.3	11.7	12.1
6	12.0	12.5	12.9	13.5	14.0	14.5
7	14.0	14.6	15.2	15.8	16.3	16.9
8	16.0	16.7	17.3	18.0	18.7	19.3
9	18.0	18.8	19.5	20.3	21.0	21.8
10	20.0	20.8	21.7	22.5	23.3	24.2
20	40.0	41.7	43.3	45.0	46.7	48.3
30	60.0	62.5	65.0	67.5	70.0	72.5
40	80.0	83.3	86.7	90.0	93.3	96.7
50	100.0	104.2	108.3	112.5	116.7	120.8

CHART #1: Converting Paces into Feet
 Read down the first column (number of paces) to the number of paces that you walked. Read across that line to the column of your average pace to obtain the number of feet you walked.
 Example: Suppose your average pace is 28" and you took 38 paces to walk a certain distance. Look down the column for 28" and read the numbers on the lines for 30 paces (70.0") and 8 paces (18.7"). Add these together for the distance covered by 38 paces (88.7").

Face:	24"	25"	26"	27"	28"	29"	30"	31"	32"	33"	34"	35"	36"
1	.5	.5	.5	.4	.4	.4	.4	.4	.4	.4	.4	.3	.3
2	1.0	1.0	.9	.9	.9	.8	.8	.8	.8	.8	.7	.7	.7
3	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.0	1.0
4	2.0	1.9	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.4	1.4	1.3
5	2.5	2.4	2.3	2.2	2.1	2.1	2.0	2.0	1.9	1.9	1.8	1.7	1.7
6	3.0	2.9	2.8	2.7	2.6	2.5	2.4	2.4	2.3	2.3	2.2	2.1	2.0
7	3.5	3.4	3.2	3.1	3.0	2.9	2.8	2.8	2.7	2.7	2.6	2.5	2.4
8	4.0	3.8	3.7	3.6	3.4	3.3	3.2	3.2	3.1	3.0	2.9	2.8	2.7
9	4.5	4.3	4.1	4.0	3.9	3.7	3.6	3.6	3.5	3.4	3.3	3.2	3.1
10	5.0	4.8	4.6	4.4	4.3	4.1	4.0	4.0	3.9	3.8	3.6	3.5	3.4
20	10.0	9.6	9.2	8.9	8.6	8.3	8.0	7.7	7.5	7.3	7.1	6.9	6.7
30	15.0	14.4	13.8	13.3	12.9	12.4	12.0	11.6	11.3	10.9	10.6	10.3	10.0
40	20.0	19.2	18.4	17.8	17.2	16.6	16.0	15.5	15.0	14.6	14.1	13.7	13.3
50	25.0	24.0	23.1	22.2	21.5	20.7	20.0	19.4	18.8	18.2	17.7	17.2	16.7
60	30.0	28.8	27.7	26.6	25.7	24.8	24.0	23.2	22.5	21.8	21.2	20.6	20.0
70	35.0	33.5	32.3	31.1	30.0	29.0	28.0	27.1	26.3	25.5	24.7	24.0	23.3
80	40.0	38.4	36.9	35.5	34.3	33.1	32.0	31.0	30.0	29.1	28.2	27.4	26.7
90	45.0	43.2	41.5	40.0	38.6	37.3	36.0	34.8	33.8	32.8	31.8	30.9	30.0
100	50.0	48.0	46.1	44.4	42.9	41.4	40.0	38.7	37.5	36.4	35.3	34.3	33.3

CHART #2: Converting Feet into Paces
 Read down the first column (distance in feet) to the distance you wish to walk. Read across that line to the column of your average pace to obtain the number of paces required. Often the distance desired must be broken down into hundreds, tens and units. For example, 258 is 200 + 50 + 8.

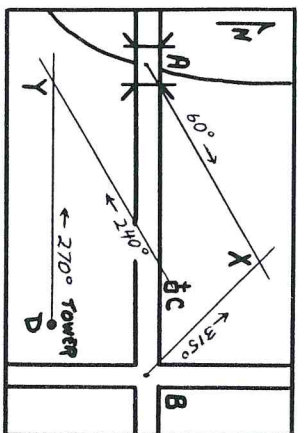
Example: Suppose your pace is 28" and you wish to find the number of paces required to walk 159'. Look down the column for 28" and read the numbers on the lines for 100' (42.9 paces), 50' (21.5 paces), and 9' (3.9 paces). Add these together for the number of paces required for 159 feet: 42.9 + 21.5 + 3.9 = 68.3 paces.

HOW TO USE A COMPASS:

- To Orient a Compass:**
 Rotate compass until north end of needle lines up with north of compass scale.
 Direction can now be read directly from compass scale.
- To Take a Bearing on an Object:**
 Orient compass (see above).
 Sight across compass face aligning object with needle pivot point.
 Read where "line-of-sight" crosses scale.
- To Sight a Desired Azimuth (Bearing):**
 Hold compass at waist.
 Rotate compass until desired bearing on compass scale is directly away from your body.
 Rotate your body until compass is oriented keeping compass steady.
 You are facing desired bearing.
 Pick out landmark in distance on this line-of-sight.
To Take a Back Azimuth:
 (Used to retrace a bearing)
 If original azimuth was 0 to 180° add 180° for back azimuth.
 If original azimuth was 181 to 360° subtract 180° for back azimuth.

USES OF COMPASS AND MAP:

- Intersection:**
 (Used to locate an object on a map when it can be seen from two known locations marked on a map)
 - Take a bearing on object from each of the two known locations.
 - Draw a line on map from the first known location along bearing sighted from that location.
 - Draw a similar line from second location along its bearing.
 - Intersection of two lines is map location of object.
- Resection:**
 (Used to find your map location when you can see two objects marked on a map)
 - Take bearings from your location to two objects marked on map.
 - Calculate back azimuths of two bearings from step #1.
 - Draw a line on map from first object along back azimuth of bearing you sighted to that object.
 - Draw similar line from second object along its back azimuth.
 - Intersection of lines is your map location.



Example of Intersection:
 Bearing from bridge A to lone tree X is 60°.
 Bearing from road junction B to lone tree X is 315°.
 Lines drawn from A and B intersect at X, the map location of the lone tree.

Example of Resection:
 Bearing from you to church C is 60° with back azimuth of 240°.
 Bearing from you to tower D is 90° with back azimuth of 270°.
 Lines drawn from C and D along back azimuths intersect at Y, your map location.

COMPASS

* USE OF COMPASS
* FOOT-TO-PADE
CONVERSION CHARTS

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