a	*b*	*x*	betai	Accuracy Achievable
1	1.5	0.5	0.646447	2×10^{-16} (full double precision)
8	10	0.5	0.685470	6×10^{-16}
20	21	0.5	0.562685	2×10^{-15}
20	21	0.1	1.87186×10^{-10}	5×10^{-15}

BezierToPolygon

```
BezierToPolygon [ flags ] bezXWave, bezYWave
```

The BezierToPolygon operation creates an XY pair of waves approximating the Bezier curves described by bezXWave and bezYWave.

The BezierToPolygon operation was added in Igor Pro 9.00.

Flags

/DSTX=*destX*	Specifies the X destination wave to be created or overwritten. If you omit /DSTX, *destX* defaults to W_PolyX.
/DSTY=*destY*	Specifies the Y destination wave to be created or overwritten. If you omit /DSTY, *destY* defaults to W_PolyY.
/FREE	Creates output waves as free waves (see **Free Waves** on page IV-91).
	/FREE is allowed only in functions. If you use /DSTX or /DSTY then the specified parameter must be either a simple name or a valid wave reference.
/NSEG=nseg	The number of segments used to render each Bezier segment from 1 and 500. The default of 20 is usually sufficient.

Details

The Bezier waves *bezXWave* and *bezYWave* must be 1-dimensional real-valued floating point waves of the same length and type.

Each Bezier curve is a minimum of 1 segment comprised of 4 XY pairs. A Bezier curve of n segments consists of 1+n*3 XY pairs.

bezXWave and *bezYWave* may have NaN values between Bezier segments but not within a segment. BezierToPolygon issues an error at runtime if the data in the input waves does not conform to these requirements. NaNs in the input waves are copied to the polygon output waves.

If you omit /DSTX the output polygon X data is written to W_PolyX in the current data folder. If you omit /DSTY the output polygon Y data is written to W_PolyY in the current data folder. The output waves are created or redimensioned as single-precision or double-precision floating point waves to match the type of *bezXWave* and *bezYWave*.

Example
```
Function DemoBezierToPolygon()
    Make/O wx={0.5, 0.6, 0.9, 1}
    Make/O wy={0.0, 0.2, 0.5, 0.1}
    BezierToPolygon wx,wy
    Execute "BezierToPolygonExample()"
End

Window BezierToPolygonExample() : Graph
    PauseUpdate; Silent 1
    Display /W=(237,45,1419,669)/K=1  wy vs wx
    AppendToGraph W_PolyY vs W_PolyX
    ModifyGraph expand=-3
    ModifyGraph mode(wy)=4
    ModifyGraph marker(wy)=19
    ModifyGraph rgb(wy)=(1,16019,65535)
    Legend/C/N=text0/J/X=15.66/Y=68.34 "\\s(wy)\\[1 Bezier Control Points"
    AppendText "\\K(48059,48059,48059)\\y+15\\L1700\\X1\\M\\K(0,0,0) DrawBezier
                                 \n\\s(W_PolyY) Polygon Approximation to Bezier"
```