

FORMULA:

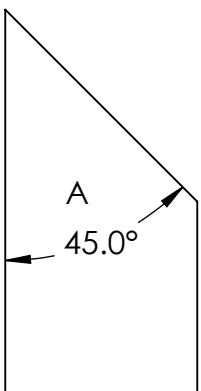
$$\text{TAN } R = \frac{\text{TAN } B}{\text{TAN } A}$$

$$\text{TAN } C = \frac{\text{TAN } A}{\text{COS } R}$$

A = 45°
 B = 45°
 R = 45.0°
 C = 54.736°

NOTES:

1. THIS EXAMPLE PRECEEDS RPT2005 TO ILLUSTRATE HOW THE FORMULA FOR THE DOUBLE DESCENDING COMPOUND ANGLE IS DERIVED.
2. IN THIS EXAMPLE A MAGNETIC COMPOUND SINE PLATE WOULD BE INCLINED TO AN ANGLE OF 45° AND THE BASE ROTATED TO A 45° ANGLE.
3. IT WOULD THEN BE INCLINED TO THE 54.736° ANGLE.
4. 2. SEE SHEET 2 FOR FORMULA DERIVATION.



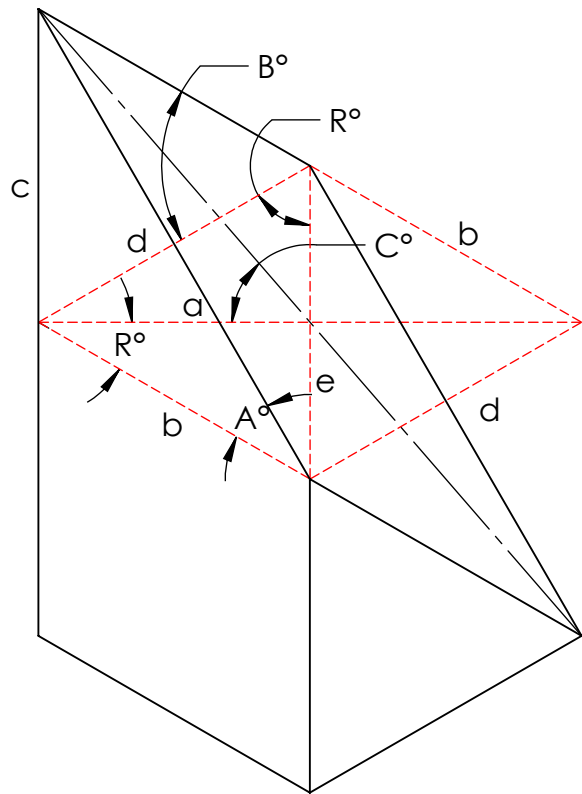
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 TOLERANCES FOR BOTH SYSTEMS ARE:
 ENGLISH: FRACTIONS ± 1/32 DECIMALS .XX ± .01 .XXX ± .002 .XXXX ± .0002
 METRIC: DECIMALS X.X ± 0.1 X.XX ± 0.01
 ALL ANGLES X ± .1° .XX ± .05°

Raystown Precision Tool
 1822 Washington Street
 Huntingdon, PA 16652

MATERIAL: **XXXXXX**
 FINISH: $\sqrt{32}$
 DRAWN BY: NWE
 DATE: XX/XX/2015
 APPROVED: _____
 DO NOT SCALE DRAWING

SPEAR, COMPOUND ANGLE
 SIZE: **A** DWG. NO.: **RPT2004**
 SCALE: XX FILE: _____ SHEET **1** OF **2**

A		Initial Release	NWE	4/15/15		
PART #	REV #	ECN	CHANGE DESCRIPTION	REV. BY	ECN DATE	CHECKED
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DERIVING THE FORMULA:

$$\text{TAN } C^\circ = \frac{\text{TAN } A}{\text{COS } R}$$

$$\text{TAN } A = c/b$$

$$\text{TAN } B = c/d$$

$$\text{TAN } R = b/d = \frac{c/\text{TAN } A}{c/\text{TAN } B} =$$

$$\text{TAN } R = \frac{\text{TAN } B}{\text{TAN } A}$$

$$\text{COS } R = a/b$$

$$\text{TAN } C = c/a = \frac{b * \text{TAN } A}{b * \text{COS } R} = \frac{\text{TAN } A}{\text{COS } R}$$

1. Sketch a plane parallel to base and located on the vertex of angle A or B, as shown by red construct lines. Draw line defining angle C.
2. Label each line segment appropriately.
3. Common sides must be used to solve to find angle R and angle C.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES FOR BOTH SYSTEMS ARE:

ENGLISH:		METRIC:		ALL ANGLES
FRACTIONS	DECIMALS	DECIMALS	DECIMALS	
± 1/32	.XX ± .01	XX ± 0.1	.X ± .1°	
	.XXX ± .002	XX ± 0.01	.XX ± .05°	
	.XXXX ± .0002	XX.XX ± 0.01		

Raystown Precision Tool

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Huntingdon, PA 16652

SPEAR HEAD, COMPOUND ANGLE

MATERIAL XXXXX

FINISH √ 32

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DATE

SIZE DWG. NO.

A RPT2004

REV.

A

SCALE: XX FILE:

SHEET 2 OF 2

PART #	REV #	ECN	CHANGE DESCRIPTION	REV. BY	ECN DATE	CHECKED
A			Initial Release	NWE	4/15/15	

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