# Calculate the Following

Calculate the answers for the following - all work must be shown to get full credit!
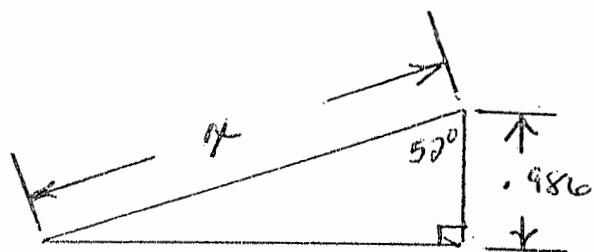
1)
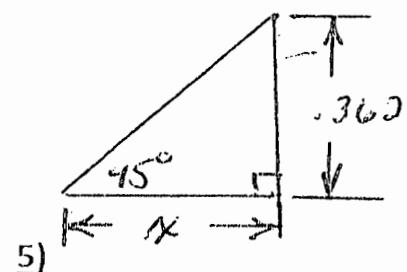
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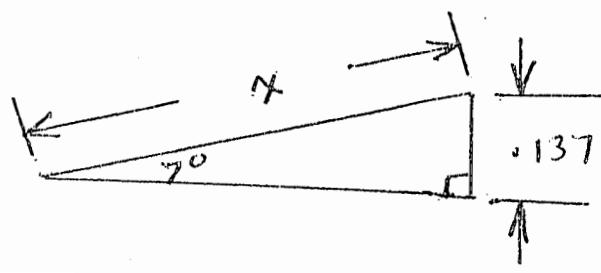
3)

4)
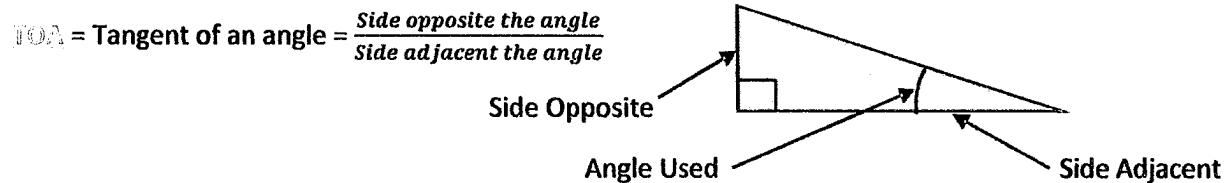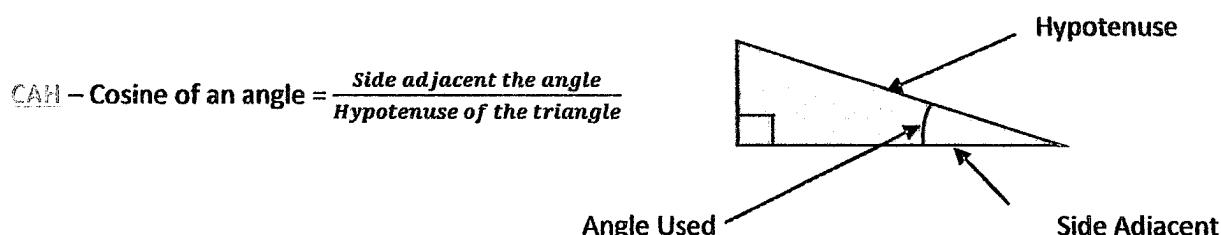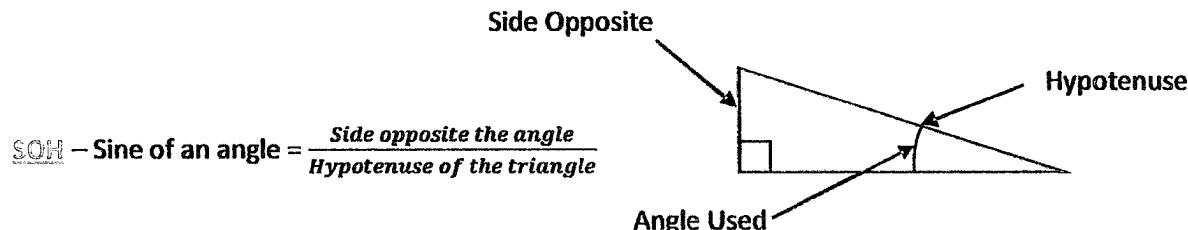
5)

SOH CAH TOA/Pythagorean Theorem

SOH CAH TOA is a basic phrase associated with calculating the sides, hypotenuse, and angles of right triangles.

SOH – Sine of an angle = $\dfrac{Side\ opposite\ the\ angle}{Hypotenuse\ of\ the\ triangle}$

CAH – Cosine of an angle = $\dfrac{Side\ adjacent\ the\ angle}{Hypotenuse\ of\ the\ triangle}$

TOA = Tangent of an angle = $\dfrac{Side\ opposite\ the\ angle}{Side\ adjacent\ the\ angle}$

Triangle – Shape that has 3 sides and 3 angles. The 3 angles of the triangle total 180 Degrees.

Right Triangle – A triangle where one angle equals 90 degrees. It is typically designated by a little right angle box in the 90 degree corner.

Adjacent Side of the Angle – Side of the triangle that is next to any given angle. – Not the hypotenuse.

Opposite Side of the Angle – Side of the triangle that is across from any angle of the triangle.

**Hypotenuse** – Longest side of the triangle – Always opposite the 90 degree angle.
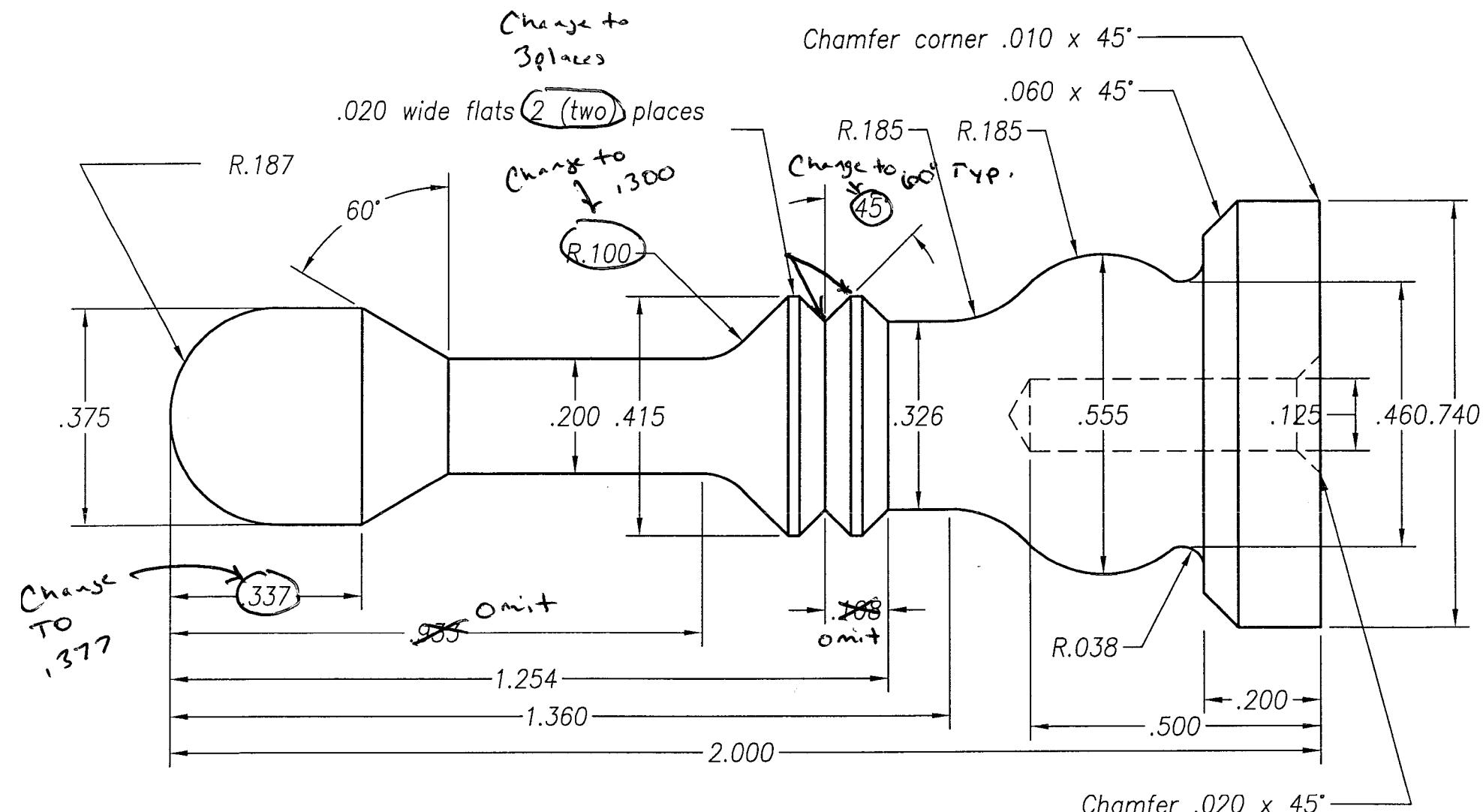
**Vertex** – A corner or point where two lines meet.

Pythagorean Theorem
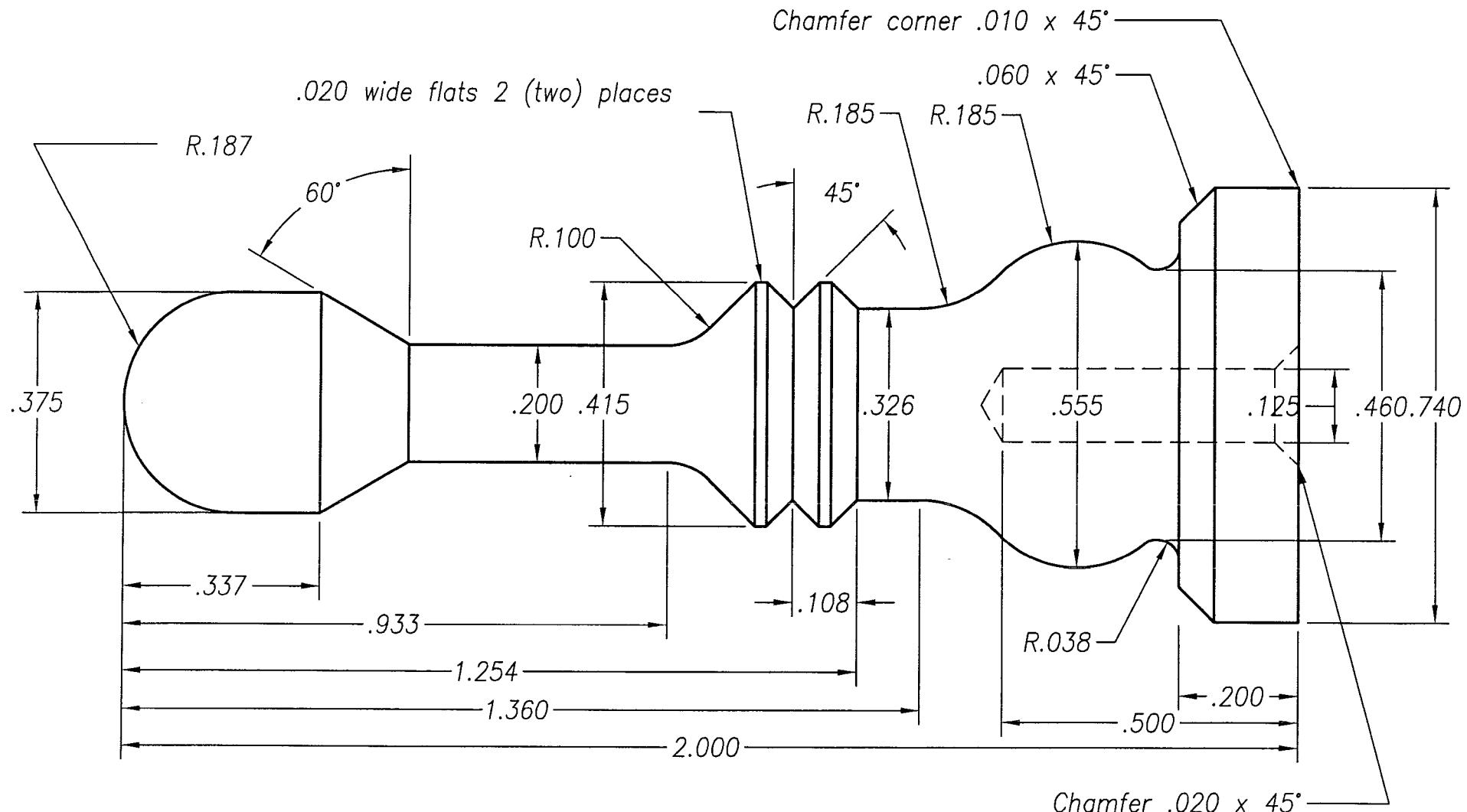
$$A^2 + B^2 = C^2$$

$$C^2 - B^2 = A^2$$
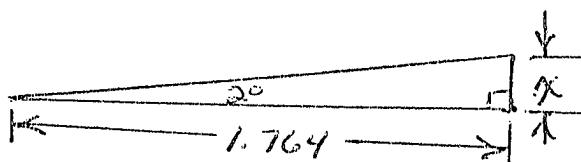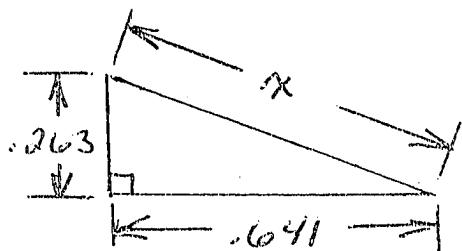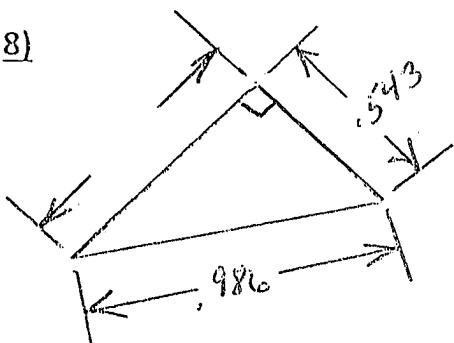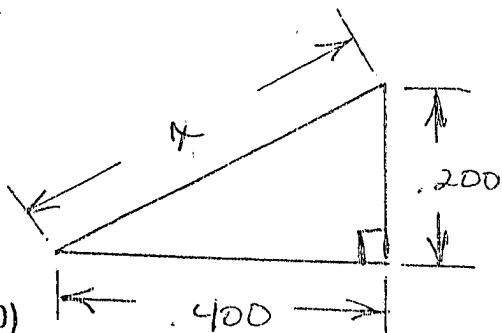
$$C^2 - A^2 = B^2$$

Chris Chomicki

Change to
3 places

.020 wide flats (2 (two)) places

Chamfer corner .010 x 45°

.060 x 45°

R.185   R.185

R.187

Change to .1300

60°

Change to 60° TYP.

R.100

45

Chamfer .020 x 45°

.375

.200 .415

.326

.555

.125

.460 .740

Change TO .377

337

omit

.168
omit

R.038

1.254

1.360

2.000

.200

.500

DIEMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED	DRAWN BY Tom Olson	DATE OCT. '06	matc	TITLE
X.X ±0.015 X.XX ±0.010 X.XXX ±0.005 X.XXXX ±0.0005 RACTIONS ± 1/64 NGLES 1/2 DEGREE	CHECKED BY	DATE	Milwaukee Area Technical College 700 West State Street Milwaukee Wisconsin 53233	PAWN
	SCALE 4:1	SIMILAR TO		
	MATERIAL 2011-T3 Alum.	STOCK SIZE 3/4" rd.	HEAT TREAT/ FINISH	Dwg. No. 34305

Chamfer corner .010 x 45°

.060 x 45°

.020 wide flats 2 (two) places

R.185

R.185

R.187

60°

45°

R.100

.375

.200 .415

.326

.555

.125

.460 .740

.337

.108

.933

R.038

.200

1.254

.500

1.360

2.000

Chamfer .020 x 45°

DIEMENSIONAL TOLERANCES UNLESS OTHERWISE SPECIFIED	DRAWN BY Tom Olson	DATE OCT. '06	matc Milwaukee Area Technical College 700 West State Street Milwaukee Wisconsin 53233	TITLE
X.X ±0.015 X.XX ±0.010 X.XXX ±0.005 X.XXXX ±0.0005	CHECKED BY	DATE		PAWN
RACTIONS ± 1/64	SCALE 4:1	SIMILAR TO		
NGLES 1/2 DEGREE	MATERIAL 2011-T3 Alum	STOCK SIZE 3/4" rd.	HEAT TREAT/ FINISH	Dwg. No. 34305

Chris Chomicki

6)

2°

1.764

X

7)

.263

.641

X

8)

.543

.986

9)

.200

.400

X

10)

45°

.250

X