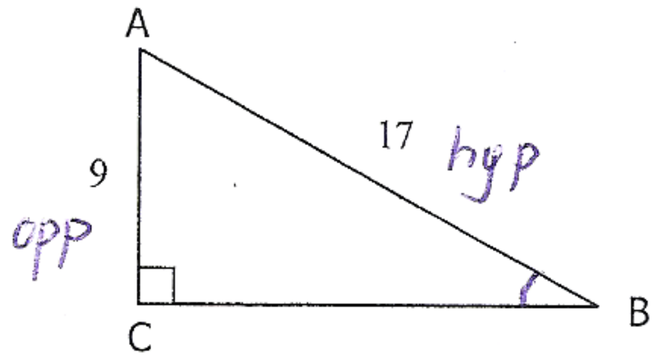
Geometry
9.6 Notes
Solving Right Triangles

Name _____
Per _____ Date _____

SOH CAH TOA

Use Trigonometric ratios to solve for an acute angle in a triangle

If you know two sides in a right triangle, you can find either acute angle.



To find m∠B, determine the trig ratio you can use with the given sides:

$\sin\theta = \frac{opp}{hyp}$

$\sin B = \frac{9}{17}$

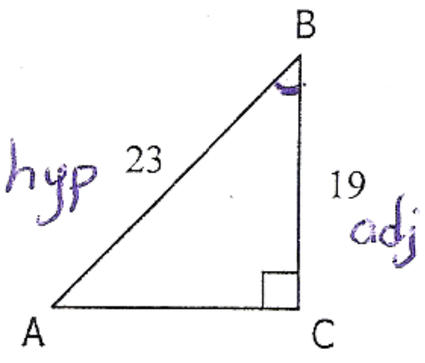
$B = \sin^{-1}(9/17)$

$= 32°$

When finding an angle in a trig equation, you will always use the key

2nd **or** INV

Ex1 Find m∠B.



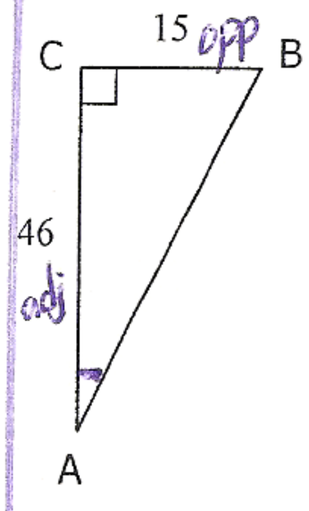
$\cos\theta = \frac{adj}{hyp}$

$\cos B = \frac{19}{23}$

$B = \cos^{-1}(19/23)$

$= 34°$

Ex2. Find m∠A.



$\tan\theta = \frac{opp}{adj}$

$\tan A = \frac{15}{46}$

$A = \tan^{-1}(15/46)$

$= 18°$

Finding an angle in a trigonometric equation without a picture.

Ex3 tanA = 3.4

$A = \tan^{-1}(3.4)$

$= 74°$

Ex4 sinB = .3952

$B = \sin^{-1}(0.3952)$

$= 23°$

Ex5 cosD = .5340

$D = \cos^{-1}(0.5340)$

$= 58°$