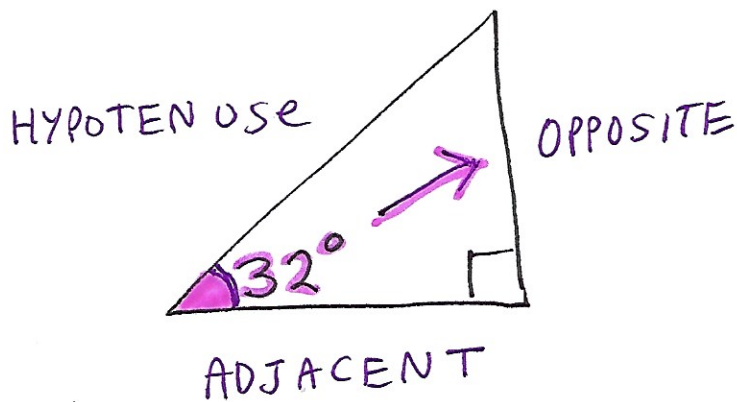


ch-8.4

Solving for a side in a right Δ

The gizmo showed you that trig ratios depend on the value of the reference angle. The ratios remained the same when the angle was 32° even when triangles were larger or smaller.



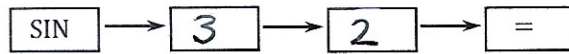
$$\sin 32^\circ = \frac{O}{H} = \boxed{0.53}$$

$$\cos 32^\circ = \frac{A}{H} = \boxed{0.848}$$

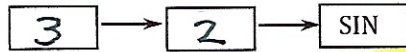
$$\tan 32^\circ = \frac{O}{A} = \boxed{0.625}$$

You can find these values using your calculators. See the next page.

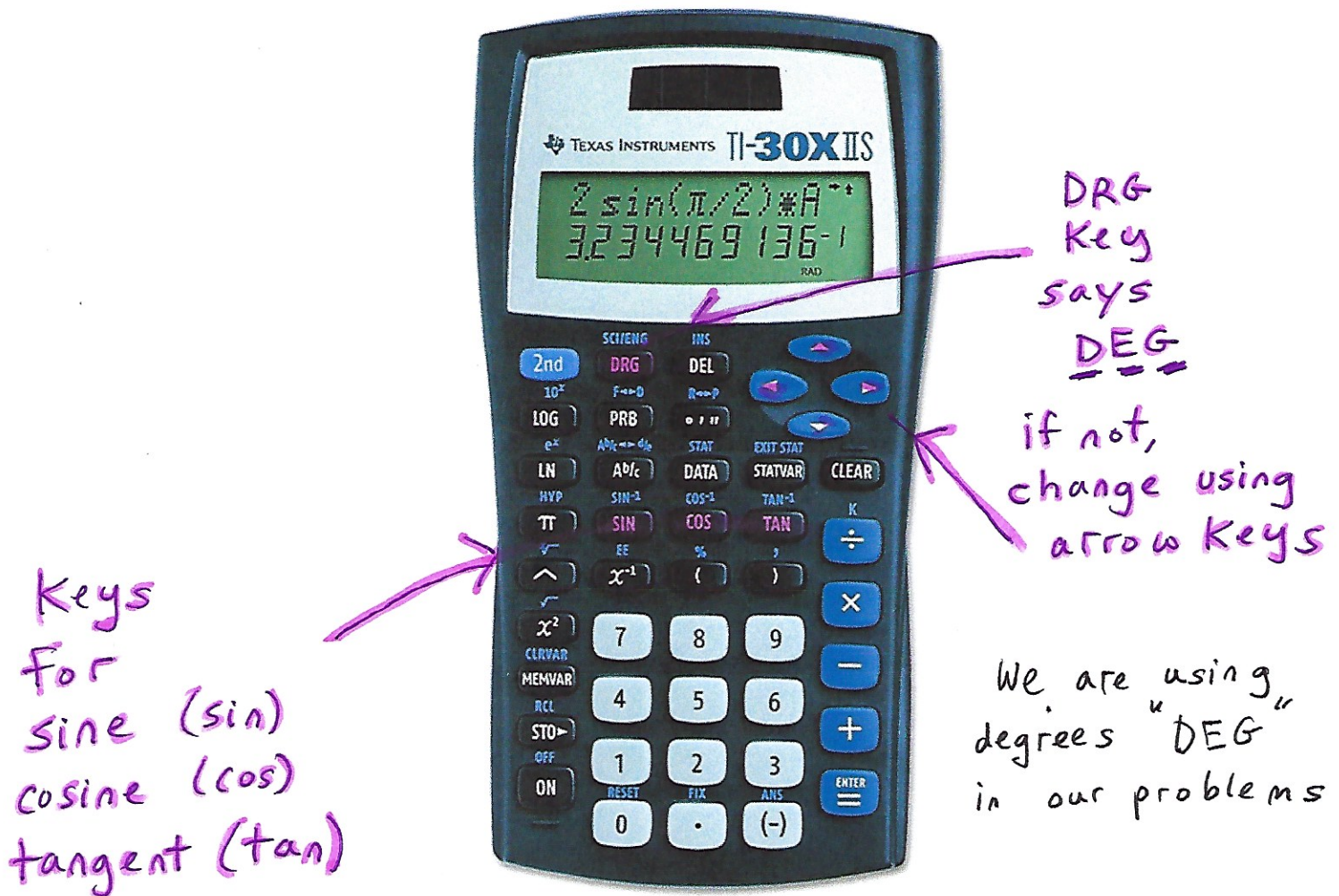
To calculate the value of $\sin 32^\circ$ on most calculators (algebraic entry) press:



If this doesn't work or gives you an error then you have a standard entry calculator press:



If this is still giving you wrong answers make sure your calculator says "DEG" somewhere on the screen. If it says "RAD", "GRAD", or something else, change it to "DEG." If you don't know how to do this consult the manual or ask someone.

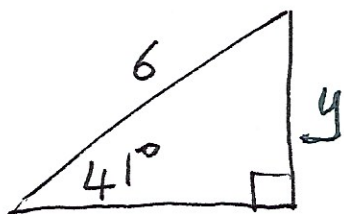


$$\sin 32^\circ = 0.53$$

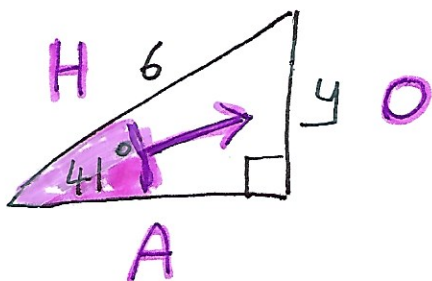
$$\cos 32^\circ = 0.848$$

$$\tan 32^\circ = 0.625$$

Practice Problems



Use trig ratios to find y



First label triangle with
"O" for opposite
"A" for adjacent and
"H" for hypotenuse

Second decide which trig ratio
you need. It will be
sin because we need to find
"O" and we know "H"

Third solve for y

$$\sin X^\circ = \frac{O}{H}$$

$$\sin 41^\circ = \frac{y}{6}$$

$$6 \cdot \sin 41^\circ = y$$

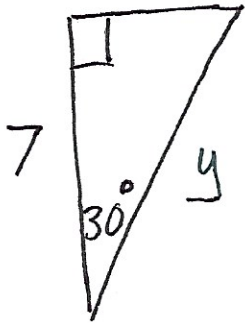
$$\boxed{3.94} = y$$

write trig ratio

substitute values

multiply both sides
by 6

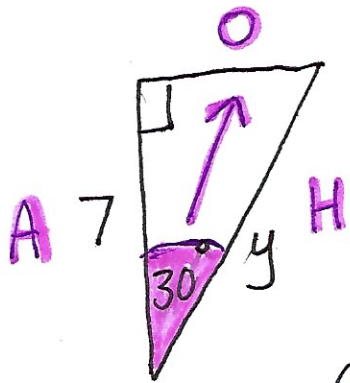
use your calculator
"sin" key



Use trig ratios to find y .

First

label triangle with
 "O" for opposite
 "A" for adjacent and
 "H" for hypotenuse.



Second decide which trig ratio you need.
 It will be \cos because we need to find "H" and we know "A"

Third Solve for y

$$\cos x^\circ = \frac{A}{H}$$

write trig ratio

$$\cos 30^\circ = \frac{7}{y}$$

substitute values

$$y \cdot \cos 30^\circ = 7$$

multiply both sides by y

$$y = \frac{7}{\cos 30^\circ}$$

divide both sides by $\cos 30^\circ$

$$y = \boxed{8.08}$$

use your calculator
 "cos" key