

Solve for an unknown angle using **inverse trigonometric functions** (*arctangent*)

Now let's look at the problem of finding angles if you know the sides.
You use the trig functions, but in reverse.

Here's an example. Suppose $o = 12.3$ and $a = 50.1$. Then $\tan A = o/a = 12.3/50.1 = 0.2455$.

Back when people used tables of trig functions, they would just look up in the tangent table to see what angle had a tangent of 0.2455. On a calculator, we use the inverse trig functions named arctangent, arcsine, and arccosine. Usually there's a button on the calculator labeled "inv" or "arc" that you press before pressing the appropriate trig button.

The arctangent of 0.2455 is 13.79, so the angle A is 13.79° .
(If you like, you can convert the .79 degrees to minutes and seconds.)

