

TI Technology Guide for *When A Ruler Isn't Enough*

TI-83 Plus and TI-83 Plus Silver Edition

Using the Trigonometric Capabilities of the Handheld

The tangent and inverse tangent function capabilities of the handheld are used in this activity. Check the **MODE** settings to be certain that the angles are measured in degrees as shown in the screenshot.

```
Normal Sci Eng
Float 0123456789
Radian Degree
FUNC Par Pol Seq
Connected Dot
Sequential Simul
Real a+bi re^θi
Full Horiz G-T
```

For steps 1 and 2, you will solve your ratio for the height of the tree. For question 1, this is expressed as the product of the tangent of 54° and the distance 30 feet.

```
tan(54)30
      41.29145761
tan-1(87/60)
      55.40771131
```

For step 3, you will solve your ratio for the angle. This is expressed as the inverse of the tangent function for the ratio of 87 feet to 60 feet on part A.

TI-73 Explorer

Check the **MODE** settings to be certain that the angles are measured in degrees as shown in the screenshot.

```
Normal Sci
Float 0123456789
Degree Radian
Sub/c b/c
Autosimp Mansimp
```

To access the trigonometric functions, press **2nd** **DRAW** which displays the [TRIG] menu screen. The rest of the instructions are the same as above for the TI-83 Plus.

```
MODE ANGLE
1: sin(
2: sin-1(
3: cos(
4: cos-1(
5: tan(
6: tan-1(
```