

Technology Activity

(Use with Lesson 13-3)

Combining Radical Expressions

You can use the TI-92's exact mode to perform operations with radical expressions in symbolic, rather than decimal, form.

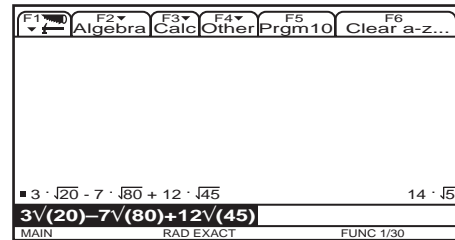
Example

Simplify $3\sqrt{20} - 7\sqrt{80} + 12\sqrt{45}$.

Display the home screen and clear the entry line by pressing

\blacklozenge **HOME** **CLEAR** **CLEAR**. To change to exact mode, press **MODE** **F2** and scroll through the list with the cursor pad until Exact/Approx is highlighted. Press \rightarrow to display the menu of settings. Enter 2 and then press **ENTER**.

Enter: 3 **2nd** $\sqrt{}$ 20 **)** **-** 7 **2nd** $\sqrt{}$ 80 **)**
+ 12 **2nd** $\sqrt{}$ 45 **)** **ENTER**



The screen displays $14\sqrt{5}$ as the result.

Use this method with a TI-92 to simplify each expression.

1. $7\sqrt{3} - 4\sqrt{147}$

$-21\sqrt{3}$

2. $5\sqrt{24} + 18\sqrt{54}$

$64\sqrt{6}$

3. $\sqrt{2}(\sqrt{30} + \sqrt{14})$

$2\sqrt{15} + 2\sqrt{7}$

4. $\sqrt{3}(\sqrt{42} - \sqrt{3})$

$3\sqrt{14} - 3$

5. $(\sqrt{5} - 3)(3\sqrt{2} + \sqrt{10})$

$-4\sqrt{2}$

6. $(\sqrt{3} + 5\sqrt{2})(2\sqrt{8} - 3\sqrt{12})$

$22 - 26\sqrt{6}$