Radicals _{Classic View}

Objectives

- Identify when additional parentheses are needed for Classic view calculators

- Calculate square roots using **2nd** **x²**
- Calculate 3rd roots using the MATH menu
- Calculate 4th or higher-index roots using the MATH menu

Identify when additional parentheses are needed

Caution: When calculating square roots, classic view calculators will often open the first parenthesis, but
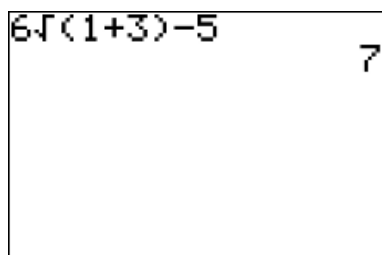
you have to type the **)** , because a group may be inside the radical.

Calculate square roots using **2nd** **x²**

**Example 1:** Calculate $6\sqrt{1+3}-5$. **Note:** This becomes $6\sqrt{(1+3)}-5$

Press these buttons: **6** **2nd** **x²** **1** **+** **3** **)** **−** **5** **enter**

See this screen:
```
6√(1+3)−5
              7
```
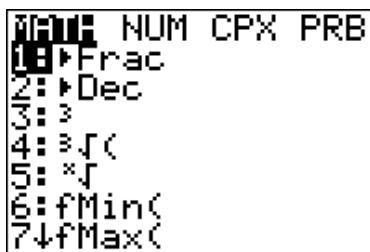
Note: The calculator used the order of operations correctly: radical (exponent), multiply, then subtract!

## Calculate 3rd roots using the MATH menu

To calculate 3rd roots, use **math** which opens a menu with four sub-menus: MATH, NUM, CPX, and PRB.
The highlighted MATH menu is active.

```
MATH NUM CPX PRB
1▶Frac
2:▶Dec
3:³
4:³√(
5:ˣ√
6:fMin(
7↓fMax(
```

Select the 4th option in the MATH menu by either pressing [4] (L4, T) (at any time) or by pressing the down arrow [▼] (☀, ▤) 3 times, then press [enter] (entry, solve).

Example 2: Calculate $\sqrt[3]{2^3 + 56}$
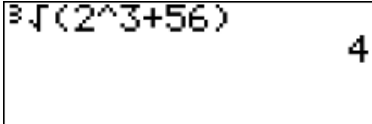
Press these buttons: [math] (test, A, L4) [4] (T, L2) [2] (Z, π) [^] (H, L3) [3] (θ, mem) [+] (" , L5) [5] (U, L6) [6] (V, }) [)] (L, entry solve) [enter]

See this screen:
```
³√(2^3+56)
                4
```

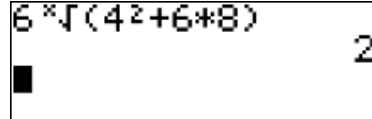# Calculate 4th or higher-index roots using the MATH menu

To calculate higher-order roots, use the MATH menu again, but select option 5.

Caution: Option 5 uses "x" to show the index of the root. Type this number <u>before pressing</u> [math] (test, A).
This abbreviation for the index does not mean multiply!
Also note: Classic view does **not** open parentheses, so we open and close them.

Example 3: Calculate $\sqrt[6]{4^2 + 6 \cdot 8}$
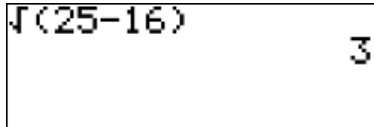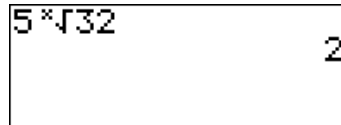
Press these buttons: [6] (L6, V) [math] (test, A, L5) [5] (U, {) [(] (K, L4) [4] (T, π) [^] (H, L3) [3] (θ, }) [)] (L, entry solve) [enter]

See this screen:
```
6 ˣ√(4²+6∗8)
                2
■
```
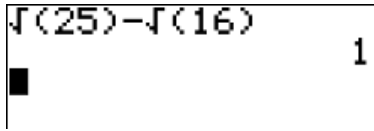
Try It!

Calculate.
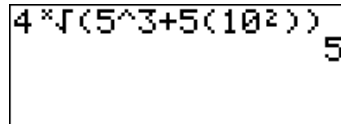
1) $\sqrt{25 - 16}$ 2) $\sqrt{25} - \sqrt{16}$ 3) $\sqrt[3]{125} + \sqrt[3]{-1}$ 4) $\sqrt[5]{32}$ 5) $\sqrt[4]{5^3 + 5(10^2)}$

Answers

1)
```
√(25-16)
            3
```

2)
```
√(25)-√(16)
            1
■
```

3)
```
³√(125)+³√(-1)
            4
■
```

4)
```
5 ˣ√32
            2
```

5)
```
4 ˣ√(5^3+5(10²))
            5
```