

Assess Your Understanding

- Give 4 examples of radicals. Use a different index for each radical.
 - Identify the radicand and index for each radical.
 - Explain the meaning of the index of each radical.
- Evaluate each radical. Justify your answer.
 - $\sqrt{36}$
 - $\sqrt[3]{8}$
 - $\sqrt[4]{10\,000}$
 - $\sqrt[5]{-32}$
 - $\sqrt[3]{\frac{27}{125}}$
 - $\sqrt{2.25}$
 - $\sqrt[3]{0.125}$
 - $\sqrt[4]{625}$
- Estimate the value of each radical to 1 decimal place.
What strategy did you use?
 - $\sqrt{8}$
 - $\sqrt[3]{9}$
 - $\sqrt[4]{10}$
 - $\sqrt{13}$
 - $\sqrt[3]{15}$
 - $\sqrt[4]{17}$
 - $\sqrt{19}$
 - $\sqrt[3]{20}$
- What happens when you attempt to determine the square root of a number such as -4 ? Explain the result.
 - For which other radical indices do you get the same result with a negative radicand, as in part a?
 - When a radicand is negative:
 - Which types of radicals can be evaluated or estimated?
 - Which types of radicals cannot be evaluated or estimated?
- For each number below, write an equivalent form as:
 - a square root
 - a cube root
 - a fourth root
 - 2
 - 3
 - 4
 - 10
 - 0.9
 - 0.2
- Choose values of n and x so that $\sqrt[n]{x}$ is:
 - a whole number
 - a negative integer
 - a rational number
 - an approximate decimal

Verify your answers.

$\sqrt[3]{7} = 1.912\,931\,182\,772\,389\,101\,199\,116\,839\,548\,760\,282\,862\,439\,050\,345\,875\,766\,210\,647\,640\,447\,234\,276\,179\,230\,756\,007\,525\,441\,477\,285\,709\,904\,541\,913\,958\,790\,759\,227\,944\,615\,293\,864\,212\,013\,147\,486\,695\,712\,445\,614\,039\,888\,169\,681\,471\,379\,702\,626\,745\,446\,612\,044\,061\,147\,761\,416\,391\,806\,241\,578\,673\,927\,453\,141\,892\,781\,075\,667\,871\,691\,066\,794\,229\,608\,191\,383\,758\,219\,601\,042\,802\,155\,946\,150\,300\,697\,613\,551\,307\,287\,191\,167\,449\,608\,313\,771\,081\,504\,584\,906\,733\,629\,612\,655\,131\,887\,183\,073\,974\,740\,458\,182\,893\,551\,185\,633\,773\,547\,212\,430\,828\,593\,092\,438\,654\,681\,098\,440\,938\,923\,431\,110\,568\,208\,310\,066\,222\,313\,508\,685\,604\,140\,201\,133\,691\,676\,872\,961\,909\,991\,081\,229\,243\,112\,174\,410\,739\,919\,535\,437\,911\,589\,068\,649\,306\,417\,647\,062\,891\,485\,738\,710\,386\,488\,768\,546\,101\,412\,787\,971\,783\,309\,636\,271\,779\,870\,721\,786\, \dots$