

Calculate the square root of the following numbers. Carry all answers to three decimal places. Check your answers by squaring them to compare with the original number.

$$\begin{array}{r}
 2.449 \\
 \sqrt{6.000000} \\
 \underline{4} \\
 200 \\
 44 \quad \underline{176} \\
 2400 \\
 484 \quad \underline{1936} \\
 46400 \\
 4889 \quad \underline{44001} \\
 2399
 \end{array}$$

Check

$$\begin{array}{r}
 2.449 \\
 \times 2.449 \\
 \hline
 9796 \\
 9796 \\
 22041 \\
 \hline
 5.997601
 \end{array}$$

$$\begin{array}{r}
 2.712 \\
 \sqrt{7.360000} \\
 \underline{4} \\
 336 \\
 47 \quad \underline{329} \\
 700 \\
 541 \\
 541 \\
 \underline{15900} \\
 10844 \\
 5056
 \end{array}$$

Check

$$\begin{array}{r}
 2.712 \\
 \times 2.712 \\
 \hline
 2712 \\
 18984 \\
 5424 \\
 \hline
 7.354944
 \end{array}$$

(84)  $\sqrt{5}$ .

(85)  $\sqrt{29}$ .

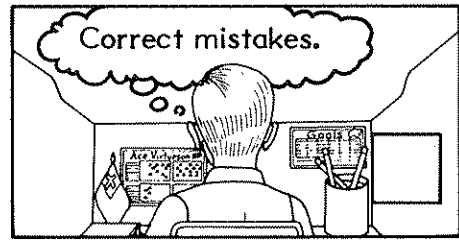
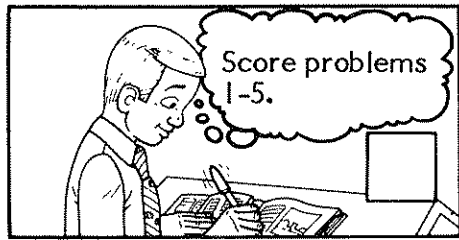
(86)  $\sqrt{61}$ .

(87)  $\sqrt{39}$ .

(88)  $\sqrt{18.271}$ .

(89)  $\sqrt{25.52}$ .





If any two of the lengths of the side of a right triangle are known, the length of the other side may be calculated by the Pythagorean Theorem. By transposing the formula  $c^2 = a^2 + b^2$ ,  $a^2 = c^2 - b^2$  and  $b^2 = c^2 - a^2$  can be obtained. These last two formulas can then be used to find the length of the two legs.

For example, if  $a = 6$  and  $c = 9$ , find the value of  $b$ .

$b =$  \_\_\_\_\_

$b^2 = c^2 - a^2$

$b^2 = 9^2 - 6^2$

$b^2 = 81 - 36$

$b^2 = 45$

$b = \sqrt{45}$

$b = 6.708$

|             |              |               |
|-------------|--------------|---------------|
| 12 <u>7</u> | 134 <u>0</u> | 1340 <u>8</u> |
|-------------|--------------|---------------|

|  |   |   |
|--|---|---|
| 6. 7 0 8   | Check   | Check the equation  |
| $\begin{array}{r} \sqrt{45.0000} \\ 36 \\ \hline 900 \\ 889 \\ \hline 1100 \\ 0 \\ \hline 110000 \\ 107264 \\ \hline 2736 \end{array}$ | $\begin{array}{r} 6.708 \\ 6.708 \\ \hline 53664 \\ 469560 \\ \hline 40248 \\ 44997264 \end{array}$ | $b^2 = c^2 - a^2$<br>$(6.708)^2 = 9^2 - 6^2$<br>$45 = 81 - 36$<br>$45 = 45$ |

Calculate the value of  $b$  to three decimal places in the following problems. Check your answers where indicated.

(6)  $c = 5$

$a = 3$

$b =$  \_\_\_\_\_

Check

Check

(7)  $c = 8$

$a = 3$

$b =$  \_\_\_\_\_

Check

(8)  $c = 20$

$a = 10$

$b =$  \_\_\_\_\_