

C8 LESSON: \sqrt{x} SQUARE ROOT

Definition: $(\sqrt{A})^2 = A$

$$\sqrt{25} = 5 \quad \text{since } 5^2 = 25$$

The "problem" is given A , what is \sqrt{A} ?

In the old days, this was a difficult problem and there was not an easy way to determine it. But, today thanks to the power tool of math, the calculator, it is very easy.

Just use the \sqrt{x} key.

346 \sqrt{x} yields the answer 18.6

Also, note x^2 and \sqrt{x} are "inverses."

This was revolutionary in the 1970's. It changed many ways we taught engineering and science subjects along with the trig functions.

NOTE: You may not take the square root of a negative number with this calculator. The square root of a negative number exists, but it is not a real number. It is called a complex or imaginary number and will require a more sophisticated power tool.

For now, $-7 \sqrt{x}$ yields an "Error" message.

C8 Exercise:

\sqrt{x}	SQUARE ROOT	Answers: []'s
1. Define \sqrt{A}		$[(\sqrt{A})^2 = A]$
2. $\sqrt{36} = ?$		[6]
3. $\sqrt{137} = ?$		[11.7]
4. $\sqrt{19.4} = ?$		[4.4]
5. $\sqrt{(5.4 + 87.2)} = ?$		[9.6]
6. $(\sqrt{76})^2 = ?$		[76]
7. $\sqrt{(35)^2} = ?$		[35]
8. $\sqrt{-73} = ?$		[Error] Why?
9. $\sqrt{(\sqrt{98})} = ?$		[3.15]
10. $\sqrt{98765432} = ?$		[9938]

Play with $\sqrt{\quad}$ until you are comfortable with it.

C8 Exercise Supplement

\sqrt{x}	SQUARE ROOT	Answers in []'s
1. Define \sqrt{A}		$[\sqrt{A} \times \sqrt{A} = A]$
2. $\sqrt{256} = ?$		[16]
3. $\sqrt{1,000,000} = ?$		[1,000]
4. $\sqrt{1000} = ?$		[31.6]
5. $\sqrt{1024} = ?$		[32]
6. $(\sqrt{1776})^2 = ?$		[1776]
7. $\sqrt{(\sqrt{(\sqrt{(\sqrt{(\sqrt{4,294,967,296))})})})} = ?$		[2]
8. $\sqrt{-(-81)} = ?$		[9]
9. $\sqrt{(\sqrt{81})} = ?$		[3]
10. $\sqrt{987654321} = ?$		[31427 \sim 10,000 π]

Play with $\sqrt{\quad}$ until you are comfortable with it.