When Do Solutions Disappear in Algebra?

1. When variables in denominators turn denominators into zero.

2. When variables in radicands turn radicands into negative numbers.

3. When a logarithmic equation produces base $b \leq 0$ for the logarithm.

Three Key Ideas for Understanding Radicals

1. $\sqrt{3} \bullet \sqrt{3} = 3$ 2. $\sqrt{3} \bullet \sqrt{2} = \sqrt{6}$ 3. $\sqrt{5} + \sqrt{5} + \sqrt{5} = 3\sqrt{5}$

Unless these three principles are learned, further study of radicals will be difficult. Practice in discriminating between these three can begin in middle grades, and should occur as part of a daily review routine.

Helpful descriptors?

1. Definition of square root 2. Arithmetic fact; verify with calculator. 3. Meaning of multiplication.

Trigonometric Function Values for "Nice" Angles

$\angle$ °	0	30	45	60	90
$\angle$ rad	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$
sine	$\frac{\sqrt{0}}{2}$	$\frac{\sqrt{1}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{4}}{2}$
cos	$\frac{\sqrt{4}}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{1}}{2}$	$\frac{\sqrt{0}}{2}$
tan	$\frac{\sqrt{0}}{3}$	$\frac{\sqrt{3}}{3}$	$\frac{\sqrt{9}}{3}$	$\frac{\sqrt{27}}{3}$	∞