

Solve each.

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2. $\sqrt{x-1} + 7 = x$

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$+ \sqrt{6x} + \sqrt{6x}$

$\sqrt{15-x} = \sqrt{6x} - 3$

$(\sqrt{15-x})^2 = (\sqrt{6x} - 3)^2$

	$\sqrt{6x} - 3$
$\sqrt{6x}$	$6x - 3\sqrt{6x}$
-3	$-3\sqrt{6x} + 9$

$15 - x = 6x + 9 - 6\sqrt{6x}$
 $-9 - 6x \quad -6x - 9$

$6 - 7x = -6\sqrt{6x}$

$(6 - 7x)^2 = (-6\sqrt{6x})^2$

	$6 - 7x$
6	$36 - 42x$
$-7x$	$-42x + 49x^2$

$36 - 6x$

$49x^2 - 84x + 36 = 216x$
 $-216x \quad -216x$

$49x^2 - 300x + 36 = 0$

$\begin{array}{r} 1764 \\ -6 \times -294 \\ \hline -300 \end{array}$

	$49x - 6$
x	$49x^2 - 6x$
-6	$-294x + 36$

$(x-6)(49x-6) = 0$

$x = 6, \cancel{6/49}$

$x = 6$

2. $\sqrt{x-1} + 7 = x$

$-7 \quad -7$

$\sqrt{x-1} = x-7$

$(\sqrt{x-1})^2 = (x-7)^2$

$x-1 = x^2 - 14x + 49$
 $-x+1 \quad -x+1$

$0 = x^2 - 15x + 50$

$0 = (x-10)(x-5)$

$x = \cancel{5}, 10$

$x = 10$