

Solve for x . Check for extraneous

$$\sqrt{7x+15} = x+3$$

$$(\sqrt{7x+15})^2 = (x+3)^2$$

$$\begin{array}{r} 7x+15 = x^2+6x+9 \\ -7x-15 \quad \quad -7x-15 \end{array}$$

$$0 = x^2 - x - 6$$

$$x^2 - x - 6 = 0$$

$$(x-3)(x+2)$$

$$x=3 \quad x=-2$$

CHECK for extraneous

$$\begin{array}{r} \sqrt{7(3)+15} = (3)+3 \\ \sqrt{36} = 6 \end{array} \quad \checkmark$$

$$\begin{array}{r} \sqrt{7(-2)+15} = (-2)+3 \\ \sqrt{1} = 1 \end{array} \quad \checkmark$$

sem
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