

March 31, 2015

10.4  
#5)  $\sqrt{2}$   $-2\sqrt{11}$   $+6\sqrt{2}$   $+4\sqrt{11}$

$7\sqrt{2} + 2\sqrt{11}$

$x + 5x =$   
 $(1+5)x$   
 $6x$

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#11)  $\sqrt{2x} (\sqrt{6x} - 3\sqrt{x})$

$\sqrt{12x^2} - 3\sqrt{2x^2}$

$2x\sqrt{3} - 3x\sqrt{2}$

$\sqrt{x^2} = \sqrt{x \cdot x}$   
 $= \sqrt{(x')^2}$   
 $= x$

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10.6

$(\sqrt{2x})^2 = (4)^2$

$2x = 16$

Check  $x=8$   $\sqrt{2(8)} = 4$   
 $\sqrt{16} = 4$   
 $4 = 4 \checkmark$

$x=8$   $\checkmark$   
*\* you must always check your solutions in the original equation.*

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$(\sqrt{2x})^2 = (-4)^2$

$2x = 16$

~~$x=8$~~  *No Solution*

Check  $x=8$   
 $\sqrt{2(8)} = -4$   
 $\sqrt{16} = -4$   
 $4 \neq -4$

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$(\sqrt{4-x})^2 = (x-2)^2$  FOIL

$4-x = (x-2)(x-2)$   
 $= x^2 - 2x - 2x + 4$   
 $4-x = x^2 - 4x + 4$   
 $0 = x^2 - 3x$

*Use of the Zero Factor Thm.*  
 $a \cdot b = 0$

Check  $x=0$   $\sqrt{4-0} = 0-2$   $\sqrt{4} = -2$   $2 \neq -2$   $\sqrt{1} = 1$   $1 = 1 \checkmark$

$x=3$   $\sqrt{4-3} = 3-2$   $\sqrt{1} = 1$   $1 = 1 \checkmark$

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10.6  
#3)  $(\sqrt{3x-1})^2 = (4)^2$

$3x-1 = 16$

$3x = 17$

$x = \frac{17}{3} \checkmark$

~~$\sqrt{\frac{3}{1}(\frac{17}{3})-1} = 4$~~

$\sqrt{17-1} = 4$   
 $\sqrt{16} = 4$   
 $4 = 4 \checkmark$

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10.6  
#5

$$\left(\sqrt[3]{x+4}\right)^3 = (-3)^3$$

$$x+4 = -27$$

$$x = -27 + (-4)$$

$$x = -31$$

$$\sqrt[3]{-31+4} = -3$$

$$\sqrt[3]{-27} = -3$$

$$-3 = -3 \checkmark$$

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#7)

$$\sqrt{7-6x} = 3-2x$$

$$7-6x = 9-12x+4x^2$$

$$0 = 4x^2 - 6x + 2$$

$$0 = (2x-2)(2x-1)$$

$p = 4 \cdot 2 = 8$   
 $q = -6$

-	-
4	2

①  $2x-2=0$   
 $2x=2$   
 $x=1$

②  $2x-1=0$   
 $2x=1$   
 $x=\frac{1}{2}$

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10.5 20 #1-#8

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