Math 12 – Workshop #18

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1. Solve the following

2. (a) $\sqrt{x+11} - \sqrt{x} = 1$
   (b) $\sqrt{y+2} = 4 - y$
   (c) $3\sqrt{x} = \sqrt{3x+12}$
   (d) $\sqrt[5]{x^2 - 4 - x^5} = -x$

3. (a) Find the x values for which $(\sqrt{x}-1)(\sqrt{x}-4) = 0$
   (b) Multiply out and simplify: $(\sqrt{x}+1)(\sqrt{x}-2)$
   (c) Fill in the banks to make the following statement true

$$(\sqrt{x} + \_\_\_\_\_)(\sqrt{x} + \_\_\_\_\_) = x + 3\sqrt{x} + 2$$

   (d) Find the x values for which $x + 3\sqrt{x} + 2 = 0$
   (e) Solve: $x - 8\sqrt{x} - 9 = 0$

4. A square has sides of length x cm. A new square is formed with diagonal one unit smaller than the diagonal of the original square. The area of the new square is $\frac{1}{2}$ cm^2. What is the side length of the original square?

5. Multiply and simplify the following

   (a) $\sqrt{\dfrac{a^3}{5x^7}} \cdot \sqrt{\dfrac{a^{-1}}{x}}$
   (b) $(\sqrt{5} - 2\sqrt{3})(7\sqrt{2} - \sqrt{3})$
   (c) $(\sqrt{3x} - 3\sqrt{x})(3\sqrt{x} - \sqrt{3x})$