

e.  $\sqrt{6-x}+4=x$

①  $6-x \geq 0$   
 $x \leq 6$

②  $\sqrt{6-x}+4=x$   
 $(\sqrt{6-x})^2 = (x-4)^2$   
 $6-x = x^2 - 8x + 16$   
 $x^2 - 8x + 16 - 6 + x = 0$   
 $x^2 - 7x + 10 = 0$   
 $(x-5)(x-2) = 0$   
 $x=5$   
 $x=2$  ✓ pass restriction.

check  
 $\sqrt{6-2}+4=2$   
 $\sqrt{4}+4=2$   
 $2+4=2$   
 $6 \neq 2$   
 $x=2$  is not a solution,  
 it is an extraneous root  
 $\sqrt{6-5}+4=5$   
 $1+4=5$   
 $5=5$   
 $x=5$  is a solution

All solutions of equations should be verified by substitution into the # original equation. Sometimes a solution of a quadratic equation produces an extraneous root, which means the number is a root to the equation but is not a solution to the problem.

Quiz Thursday on 3.1 factoring  
 open book  
 use your notes.

3.2

HW p. 189-196 #5bd, 6bd, 8bd, 10bd, 12a,  
 13, 16, 18