Name Key Date Hour

7.7 Bookwork
Page 425 #11 – 17 (odds), 18, 19, 21

11. $\sqrt{x} = 4$

$x = 16$

CHECK
$\sqrt{16} = 4$ ✱

13. $x^{\frac{1}{2}} + 9 = 0$

$\left(x^{\frac{1}{2}}\right)^2 = (-9)^2$

$x = 81$

no solution

CHECK
$81^{\frac{1}{2}} + 9 = 0$
$9 + 9 = 0$
$18 \neq 0$

15. $7 + \sqrt{4x+8} = 9$

$\sqrt{4x+8} = 2$
$4x + 8 = 4$
$4x = -4$
$x = -1$

CHECK
$7 + \sqrt{4(-1)+8} = 9$
$7 + 2 = 9$
$9 = 9$ ✱

17. $\sqrt{x-5} = \sqrt{2x-4}$

$x - 5 = 2x - 4$
$-1 = x$

no solution

CHECK
$\sqrt{-1-5} = \sqrt{2(-1)-4}$
$\sqrt{-6} = \sqrt{-6}$
NO!

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

$2x - 7 = x + 2$
$x = 9$

CHECK
$\sqrt{2(9)-7} = \sqrt{9+2}$
$\sqrt{11} = \sqrt{11}$ ✱

EXTRA CREDIT!

19. $\left(\sqrt{x-6} - \sqrt{x}\right)^2 = (3)^2$

$x - 6 - \sqrt{x(x-6)} - \sqrt{x(x-6)} + x = 9$

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

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

$4(x^2-6x) = 225 - 60x + 4x^2$

$4x^2 - 24x = 225 - 60x + 4x^2$

$36x = 225$

$x = 6.25$

CHECK
NO!
no solution

21. $\sqrt{x+1} = \sqrt{x+6} - 1$

$x + 1 = x + 6 - 2\sqrt{x+6} + 1$

$-6 = -2\sqrt{x+6}$

$3 = \sqrt{x+6}$

$9 = x + 6$

$3 = x$

CHECK
$\sqrt{3+1} = \sqrt{3+6} - 1$
$2 = 2$ ✱