Feb 19 Thurs HW Solution

6.d) $\frac{\sqrt{1}}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{1\times 2}}{\sqrt{2^2}} = \frac{\sqrt{2}}{2}$

6.g) $\frac{4\sqrt{2}}{\sqrt{8}} \times \frac{\sqrt{8}}{\sqrt{8}} = \frac{4\sqrt{2\times 4\times 2}}{\sqrt{8^2}}$

$= \frac{4\sqrt{2^2}\cdot\sqrt{2^2}}{8} = \frac{4\cdot 2\cdot 2}{8} = \frac{16}{8} = 2$

7.j) $\frac{(2\sqrt{7}+\sqrt{5})}{(3\sqrt{7}-2\sqrt{5})} \times \frac{(3\sqrt{7}+2\sqrt{5})}{(3\sqrt{7}+2\sqrt{5})}$

$a = 3\sqrt{7}$, $b = 2\sqrt{5}$

$= \frac{6\cdot(\sqrt{7})^2 + 4\sqrt{35} + 3\sqrt{35} + 2\cdot(\sqrt{5})^2}{(3\sqrt{7})^2 - (2\sqrt{5})^2}$

$= \frac{42 + 4\sqrt{35} + 3\sqrt{35} + 10}{(9\cdot 7) - (4\cdot 5)}$

$= \frac{52 + 7\sqrt{35}}{63 - 20} = \frac{52 + 7\sqrt{35}}{43}$

7i) $\dfrac{\sqrt{2}+\sqrt{5}}{\sqrt{6}-\sqrt{10}} \times \dfrac{(\sqrt{6}+\sqrt{10})}{(\sqrt{6}+\sqrt{10})}$

$= \dfrac{\sqrt{2\times2\times3} + \sqrt{2\times5\times2} + \sqrt{5\times3\times2} + \sqrt{5\times5\times2}}{6-10}$

$= \dfrac{2\sqrt{3} + 2\sqrt{5} + \sqrt{30} + 5\sqrt{2}}{-4}$

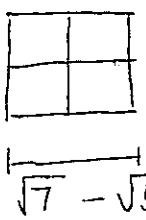
$= -\dfrac{2\sqrt{3} + 2\sqrt{5} + 5\sqrt{2} + \sqrt{30}}{4}$

8. $P = \sqrt{80} + \sqrt{5} + \sqrt{20} + \sqrt{45}$

$= \sqrt{5\times16} + \sqrt{5} + \sqrt{4\times5} + \sqrt{5\times9}$

$= 4\sqrt{5} + \sqrt{5} + 2\sqrt{5} + 3\sqrt{5}$

$= 10\sqrt{5}$

15. 

$x \times (\sqrt{7} - \sqrt{5}) = 4$

$x = \dfrac{4}{(\sqrt{7}-\sqrt{5})}$

$x = \dfrac{4(\sqrt{7}+\sqrt{5})}{(\sqrt{7}-\sqrt{5})(\sqrt{7}+\sqrt{5})}$

$x = \dfrac{4\sqrt{7}+4\sqrt{5}}{7-5} = \dfrac{4\sqrt{7}+4\sqrt{5}}{2} = 2\sqrt{7}+2\sqrt{5}$