Homework – Rationalizing the Denominator #2 (binomials)

Simplify completely

1) $\frac{5}{\sqrt{5}+2} \cdot \frac{\sqrt{5}-2}{\sqrt{5}-2} = \frac{5\sqrt{5}-10}{1} = \boxed{5\sqrt{5}-10}$

DENOMINATOR SCRATCH

$5 - 2\sqrt{5} + 2\sqrt{5} - 4$

$5 - 4 = 1$

2) $\frac{\sqrt{3}}{\sqrt{17}+2} \cdot \frac{\sqrt{17}-2}{\sqrt{17}-2} = \boxed{\frac{\sqrt{51}-2\sqrt{3}}{13}}$

SCRATCH

$17 - 2\sqrt{17} + 2\sqrt{17} - 4$

$17 - 4 = 13$

3) $\frac{9}{6-\sqrt{10}} \cdot \frac{6+\sqrt{10}}{6+\sqrt{10}} = \boxed{\frac{54+9\sqrt{10}}{26}}$

SCRATCH

$36 + 6\sqrt{10} - 6\sqrt{10} - 10$

$= 26$

4) $\frac{\sqrt{6}}{\sqrt{7}-\sqrt{2}} \cdot \frac{\sqrt{7}+\sqrt{2}}{\sqrt{7}+\sqrt{2}} = \frac{\sqrt{42}+\sqrt{12}}{5} \xrightarrow{\text{SIMPLIFY}} = \boxed{\frac{\sqrt{42}+2\sqrt{3}}{5}}$

SCRATCH

$7 + \sqrt{14} - \sqrt{14} - 2$

$7 - 2 = 5$