Radical Expressions (continued)

6. $(3+\sqrt{2})(4-\sqrt{8})$

FOIL

$12-3\sqrt{8}+4\sqrt{2}-\sqrt{16}$

$12-3\sqrt{4}\sqrt{2}+4\sqrt{2}-4$

$12-3\cdot 2\sqrt{2}+4\sqrt{2}-4$

$12-6\sqrt{2}+4\sqrt{2}-4$

$8-2\sqrt{2}$

7. $\frac{4}{5-\sqrt{2}} \cdot \frac{5+\sqrt{2}}{5+\sqrt{2}} = \frac{4(5+\sqrt{2})}{(5-\sqrt{2})(5+\sqrt{2})}$

$= \frac{20+4\sqrt{2}}{25-2} = \frac{20+4\sqrt{2}}{23}$

8. $\frac{7}{2+\sqrt{3}} \cdot \frac{2-\sqrt{3}}{2-\sqrt{3}} = \frac{7(2-\sqrt{3})}{(2+\sqrt{3})(2-\sqrt{3})} = \frac{14-7\sqrt{3}}{4-3}$

$= 14-7\sqrt{3}$

9. $\frac{2+2\sqrt{3}}{2} = \frac{2}{2} + \frac{2\sqrt{3}}{2} = 1+\sqrt{3}$

10. $\frac{6+4\sqrt{2}}{2} = \frac{6}{2} + \frac{4\sqrt{2}}{2} = 3+2\sqrt{2}$

Solving Quadratic Equations Using Square Roots

1. $x^2 = 49$ $\sqrt{x^2} = \sqrt{49}$ $x = \pm 7$

* Isolate the x^2
* Take square root (Extract the Root)

2. $\frac{2x^2}{2} = \frac{200}{2}$

$\sqrt{x^2} = \sqrt{100}$ $x = \pm 10$

3. $2x^2 - 15 = 65$

$+15 \quad +15$

$\frac{2x^2}{2} = \frac{80}{2}$

$\sqrt{x^2} = \sqrt{40}$

$x = \pm\sqrt{40} = \pm\sqrt{4}\sqrt{10} = \pm 2\sqrt{10}$