SURDS 2008-10

3)

$$\frac{5-\sqrt{3}}{2+\sqrt{3}} = \frac{5-\sqrt{3}}{2+\sqrt{3}} \times \frac{2-\sqrt{3}}{2-\sqrt{3}}$$

$$= \frac{10-2\sqrt{3}-5\sqrt{3}+3}{2^2-\sqrt{3}^2}$$

$$= \frac{13-7\sqrt{3}}{4-3} \qquad = 13-7\sqrt{3}$$

---

3) $(\sqrt{7}+2)(\sqrt{7}-2)$

$= 7 + 2\sqrt{7} - 2\sqrt{7} - 4$

$= 3$

---

1) a) $(3\sqrt{7})^2 = 3\sqrt{7} \times 3\sqrt{7} = 9 \times 7 = 63$

---

b) $(8+\sqrt{5})(2-\sqrt{5})$

$= 16 + 2\sqrt{5} - 8\sqrt{5} - 5 \qquad = 11 - 6\sqrt{5}$

---

2) a) $(7+\sqrt{5})(3-\sqrt{5}) = 21 + 3\sqrt{5} - 7\sqrt{5} - 5$

$= 16 - 4\sqrt{5}$

---

b) $\frac{7+\sqrt{5}}{3+\sqrt{5}} = \frac{7+\sqrt{5}}{3+\sqrt{5}} \times \frac{3-\sqrt{5}}{3-\sqrt{5}} = \frac{21+3\sqrt{5}-7\sqrt{5}-5}{3^2-\sqrt{5}^2}$

$= \frac{16-4\sqrt{5}}{4}$

$= 4-\sqrt{5}$

SURDS 2008-10

1) $\sqrt{75} - \sqrt{27}$

$= \sqrt{25 \times 3} - \sqrt{9 \times 3}$

$= 5\sqrt{3} - 3\sqrt{3}$

$= 2\sqrt{3}$
