

Answers :

- 1) 1. $4\sqrt{5} - 2\sqrt{15}$
2. $6\sqrt{22} - 4\sqrt{55}$
3. $20 - 5\sqrt{7} + 4\sqrt{3} - \sqrt{21}$
4. $34 - 24\sqrt{2}$
5. 1
6. 236

4) 1. $\frac{3\sqrt{6} - \sqrt{3}}{12}$

2. $\frac{1 - \sqrt{5}}{4}$

3. $\frac{\sqrt{6} - 2\sqrt{2}}{6}$

4. $\frac{2\sqrt{2} - 5\sqrt{3}}{3}$

2) 1. $\frac{\sqrt{3} + 1}{2}$

2. $6 + 2\sqrt{5}$

3. $\frac{7 - 3\sqrt{5}}{2}$

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

5. $3\sqrt{2} + \sqrt{6}$

6. $-2\sqrt{2} - 4$

5) a) $24 - 60\sqrt{2}$

b) $24 - 8\sqrt{5}$

c) 26

d) $40\sqrt{10} - 32\sqrt{5} - 15\sqrt{2} + 12$

6) a) $\frac{3\sqrt{5} + 1}{4}$

b) $\frac{4\sqrt{30} + 6\sqrt{5}}{5}$

c) $\frac{4 - \sqrt{6}}{2}$

d) $\sqrt{3} + 1$

3) $\frac{5\sqrt{6} - 3\sqrt{3}}{7\sqrt{3} \cdot \sqrt{3}}$

$\hookrightarrow \frac{5\sqrt{18} - 3\sqrt{3}}{7 \cdot 3}$

$\frac{5\sqrt{2 \cdot 9} - 3\sqrt{3}}{7 \cdot 3}$

$\frac{15\sqrt{2} - 3\sqrt{3}}{7 \cdot 3}$

$\frac{15 \overset{\div 3}{\sqrt{2}} - 3 \overset{\div 3}{\sqrt{3}}}{21 \div 3}$

3) $\boxed{\frac{5\sqrt{2} - \sqrt{3}}{7}}$

$$7) \quad \frac{2\sqrt{5}}{4+3\sqrt{2}} \quad \frac{18\sqrt{5}-12\sqrt{10}}{3\sqrt{2}}$$

$\left(\left(\right) \right) \quad \left(\left(\right) \right)$

$$= 3\sqrt{10} - 4\sqrt{5} \quad 3\sqrt{10} - 4\sqrt{5}$$

Yes, the two expressions are equivalent!

$$8) \quad 1. \quad 4\sqrt{6} + 5 - 24\sqrt{2} - 10\sqrt{3}$$

$$2. \quad \frac{4\sqrt{2} - 10\sqrt{3}}{-2} \quad \text{or} \quad \frac{-4\sqrt{2} + 10\sqrt{3}}{2}$$