

Exercice 3

$$C = 5\sqrt{6} + 2\sqrt{3} = 5\sqrt{2 \times 3} + 2\sqrt{3} = 5 \times 2 + \sqrt{3} + \sqrt{3} + \sqrt{2} \\ = 10 + 3 + \sqrt{2} = \underline{\underline{30\sqrt{2}}}$$

$$D = \sqrt{75} + 7\sqrt{3} - 2\sqrt{27} = \sqrt{25 \times 3} + 7\sqrt{3} - 2\sqrt{9 \times 3} = 5\sqrt{3} + 7\sqrt{3} - 2 \times 3\sqrt{3} \\ = 5\sqrt{3} + 7\sqrt{3} - 6\sqrt{3} = \underline{\underline{6\sqrt{3}}}$$

Exercice 4

$$1) C = 2\sqrt{5} + \sqrt{125} - 6\sqrt{45} = 2\sqrt{5} + \sqrt{25 \times 5} - 6\sqrt{9 \times 5} \\ = 2\sqrt{5} + 5\sqrt{5} - 6 \times 3\sqrt{5} = 2\sqrt{5} + 5\sqrt{5} - 18\sqrt{5} = \underline{\underline{-11\sqrt{5}}}$$

$$2) D = (3\sqrt{2} + 3)(\sqrt{2} - 1) = (3\sqrt{2} + \sqrt{2}) - 3\sqrt{2} + 3\sqrt{2} - 3 = (3+2) - 3 = 6-3 \\ = \underline{\underline{3}}, \text{ donc } D \text{ est un nombre entier égal à } 3.$$

Exercice 5

$$B = \sqrt{25} - \sqrt{75} + 5\sqrt{27} - \sqrt{36 \times 3} + 2\sqrt{9} \\ = 5 - \sqrt{25 \times 3} + 5 \times \sqrt{9 \times 3} - 6\sqrt{3} + (2 \times 3) = 5 - 5\sqrt{3} + (5 \times 3)\sqrt{3} - 6\sqrt{3} + 6 \\ = 5 - 5\sqrt{3} + 15\sqrt{3} - 6\sqrt{3} + 6 = \underline{\underline{11 + 4\sqrt{3}}}$$

Exercice 6

$$1) D = \sqrt{6} + 2\sqrt{3} = \sqrt{2 \times 3} + 2\sqrt{3} = \sqrt{2} \times \sqrt{3} + 2 \times \sqrt{3} = 2 \times 3 + \sqrt{2} = \underline{\underline{6\sqrt{2}}} \\ E = \sqrt{32} - 3\sqrt{50} = \sqrt{16 \times 2} - 3\sqrt{25 \times 2} = 4\sqrt{2} - (3 \times 5)\sqrt{2} \\ = 4\sqrt{2} - 15\sqrt{2} = \underline{\underline{-11\sqrt{2}}}$$

$$2) D \times E = 6\sqrt{2} \times (-11\sqrt{2}) = 6 \times (-11) + \sqrt{2} \times \sqrt{2} = -66 + 2 = \underline{\underline{-132}} \\ \text{Donc } D \times E \text{ est un entier relatif égal à } -132$$