

$$3.6 \quad a) (-4x+7)^2 = (7-4x)^2 = 7^2 - 2 \cdot 7 \cdot 4x + (4x)^2 = 49 - 56x + 16x^2$$

$$b) (-x-1)^2 =$$

$$c) (-x^2-3)^2 =$$

$$3.11 \quad a) (a+b)^2 = a^2 + b^2$$

Vastamerkki:  $(1+1)^2 = 1^2 + 1^2 \Leftrightarrow 2^2 = 1 + 1 \Leftrightarrow 4 = 2 \quad \downarrow$   
 $\Rightarrow$  kaava ei ole oikein

$$b) \sqrt{a^2+b^2} = a+b$$

Vastamerkki:

3.8

#### 4. Summan ja erotuksen tulo

$$(a-b)(a+b) = a^2 + ab - ba - b^2 = a^2 - b^2$$

$$\Rightarrow \boxed{(a-b)(a+b) = a^2 - b^2}$$

Esim. a)  $(x-3)(x+3) = x^2 - 3^2 = x^2 - 9$

$$b) (-ab^2+1)(1+ab^2) = (1-ab^2)(1+ab^2) = 1^2 - (ab^2)^2 = 1 - a^2(b^2)^2 = 1 - a^2b^4$$

$$c) (2x-3)(4x^2+9)(2x+3) =$$

$$\begin{aligned} & \left( (2x)^2 - 3^2 \right) (4x^2 + 9) = (4x^2 - 9)(4x^2 + 9) \\ & = (4x^2)^2 - 9^2 = 16x^4 - 81 \end{aligned}$$

$$4.2a) (2x+3)(2x-3) = (2x)^2 - 3^2 = 4x^2 - 9$$

$$b) (3-5x)(3+5x) = 3^2 - (5x)^2 = 9 - 25x^2$$

$$c) (x+1)(x-2) = x^2 - 2x + x - 2 = x^2 - x - 2$$

4.4

$$4.8 \quad a) (\sqrt{5}+1)^2 = (\sqrt{5})^2 + 2 \cdot \sqrt{5} \cdot 1 + 1^2 = 5 + 2\sqrt{5} + 1 = 6 + 2\sqrt{5}$$

$$b) (\sqrt{5}+\sqrt{2})(\sqrt{5}-\sqrt{2}) = (\sqrt{5})^2 - (\sqrt{2})^2 = 5 - 2 = 3$$

$$c) (5-6\sqrt{2})^2 = 5^2 - 2 \cdot 5 \cdot 6\sqrt{2} + (6\sqrt{2})^2 = 25 - 60\sqrt{2} + 36 \cdot 2 = 97 - 60\sqrt{2}$$