I 1c 2b 3b 4.a 5c.

II 1 (A) $5 \to 5+1=6 \to 6^2=36 \to 36-25=11$

(B) $5 \to 5\times 2+1=11$

2. (A) $\sqrt{2} \to \sqrt{2}+1 \to (\sqrt{2}+1)^2 \to (\sqrt{2}+1)^2-2 = 2+2\sqrt{2}+1-2 = 2\sqrt{2}+1$

(B) $\sqrt{2} \to 2\sqrt{2}+1$

3. (A) $x \to x+1 \to (x+1)^2 \to (x+1)^2-x^2 = x^2+2x+1-x^2 = 2x+1$

(B) $x \to 2x+1$

4. $2x+1=-5$

$2x=-6$

$\boxed{x=-3}$

III 1a $(x-1)^2 = x^2-2x+1$

b. $99^2 = (100-1)^2 = 100^2 - 2\times 100 + 1$

$= 10\,000 - 200 + 1$

$= 9800+1$

$= 9801$

2a. $x^2-4 = (x+2)(x-2)$

$98\times 102 = (100-2)(100+2)$

$= 100^2-2^2$

$= 10\,000-4$

$= 9996$.

IV 1. $x=\frac{3}{4}$ $(4\times\frac{3}{4}-3)^2-9 = (3-3)^2-9 = 0^2-9 = -9$ pas sol.

2. $x=0$ $(4\times 0-3)^2-9 = (-3)^2-9 = 9-9 = 0$ sol.

2. $(4x-3)^2-5 = 16x^2-24x+9-9$

$= 16x^2-24x$

$= 8x(4x-6)$

3. $(4x-3)^2-9=0$ $4x(4x-6)=0$ soit $4x=0$ $\boxed{x=0}$ soit $4x-6=0$

$4x=6$

$\boxed{x=\frac{3}{2}}$

V 1a. $\mathcal{A}(ABCD) = 40^2 = 1600\ cm^2$

b. $\mathcal{A}(DEFG) = 25\times(40+25) = 25\times 65 = 1625\ cm^2$

2. $\mathcal{A}(ABCD) = x^2$

$\mathcal{A}(DEFG) = (x-15)(x+25)$

$= x^2+10x-375$

Posons $x^2+10x-375 = x^2$

$10x-375=0$

$\boxed{x=37,5}$