6 (a) $5^x = 7$

$\lg(5^x) = \lg 7$

$x \cdot \lg 5 = \lg 7$

$x = \dfrac{\lg 7}{\lg 5}$

Svar: $x = \dfrac{\lg 7}{\lg 5}$

(b) $3 - \sqrt{\sqrt{2x-5}} = 0$

$\sqrt{\sqrt{2x-5}} = 3$

Kvadrera VL och HL två gånger:

$2x - 5 = (3^2)^2$

$2x - 5 = 81$

$2x = 86$

$x = 43$

Svar: $x = 43$

Prövning av $x = 43$:

$VL = 3 - \sqrt{\sqrt{2 \cdot 43 - 5}} = 3 - \sqrt{\sqrt{81}}$

$= 3 - \sqrt{9} = 3 - 3 = 0$

$HL = 0$ OK!

(c) $\lg 200 - \lg 2 + 98 = 10^x$

$\lg\left(\dfrac{200}{2}\right) + 98 = 10^x$

$\lg 100 + 98 = 10^x$

$2 + 98 = 10^x$

$100 = 10^x$

$10^x = 100$

$\lg(10^x) = \lg 100$

$x \cdot \underbrace{\lg 10}_{1} = 2$

$x = 2$

$\lg\frac{A}{B} = \lg A - \lg B$

$\lg 100 = 2$

Alternativ avslutning:

$10^x = 10^2$

$x = 2$

Svar: $x = 2$

6 (forts)

(d) $(3x-4)(4-3x) = -9x^2$

$12x - 9x^2 - 16 + 12x = -9x^2$

$24x - 16 = 0$

$24x = 16$

$x = \frac{16}{24} = \frac{2}{3}$

Svar: $x = \frac{2}{3}$

(e) $(5987-x)^2 - 2(5987-x) = 0$

$(5987-x)\left((5987-x) - 2\right) = 0$

Bryt ut $(5987-x)$

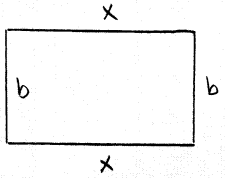
$(5987-x)(5985-x) = 0$

$5987 - x = 0$ eller $5985 - x = 0$

$x = 5987$ $\quad$ $x = 5985$

Svar: $x_1 = 5985$, $x_2 = 5987$

7



(m)

$2x + 2b = 120$

$2b = 120 - 2x$

$b = 60 - x$

$\frac{120-2x}{2} = \frac{120}{2} - \frac{2x}{2} = 60 - x$

Arean

$x \cdot b = x \cdot (60-x) = 60x - x^2$

Svar: $A = 60x - x^2$