

$$\boxed{3} \quad (a) \quad \lg 18 - \lg 6 = \lg \frac{18}{6} = \lg 3 \quad (\underline{\underline{\text{Svar}}})$$

$$(b) \quad (3b-2)^2 - (b+4) = (3b)^2 - 12b + 4 - b - 4 = 9b^2 - 13b \quad (\underline{\underline{\text{Svar}}})$$

$$\boxed{4} \quad (a) \quad 5^x = 20$$

$$\lg(5^x) = \lg 20$$

$$x \cdot \lg 5 = \lg 20$$

$$x = \frac{\lg 20}{\lg 5}$$

$$\underline{\underline{\text{Svar}}}: x = \frac{\lg 20}{\lg 5}$$

$$(b) \quad \sqrt{x-3} = 6$$

Kvadrera!

$$x-3 = 36$$

$$x = 39$$

$$\underline{\underline{\text{Svar}}}: x = 39$$

Prövning av  $x = 39$ :

$$VL = \sqrt{39-3} = \sqrt{36} = 6$$

HL = 6 OK!

$$(c) \quad 3^{2x} = 2 \cdot 3^x$$

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

$$3^x = 2$$

$$\lg(3^x) = \lg 2$$

$$x \cdot \lg 3 = \lg 2$$

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

$$\underline{\underline{\text{Svar}}}: x = \frac{\lg 2}{\lg 3}$$

$$\frac{3^{2x}}{3^x} = 3^{2x-x} = 3^x$$