

12

$$\int_1^2 3x^2 dx = \left[x^3 \right]_1^2 = 2^3 - 1^3 = 8 - 1 = 7$$

Svar: 7

13

(a) $A(x) = 6x - 3x^2$

\uparrow \uparrow
 area i m^2 blomrabattens bredd i m

Derivatans nollställen

$$A'(x) = 6 - 6x$$

$$A'(x) = 0 \text{ ger } 6 - 6x = 0$$

$$x = 1$$

Teckentabell

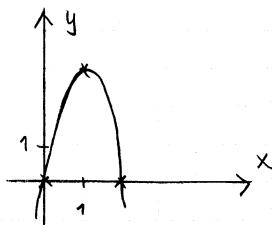
x	1		
A'	+	0	-
A	↗	3 MAX	↘

$$A'(0) = 6 > 0$$

$$A'(2) = 6 - 6 \cdot 2 < 0$$

(b) Extremvärden

$$x = 1 \text{ ger } A_{\max} = 6 \cdot 1 - 3 \cdot 1^2 = 3$$

Grafen

x	0	2
A(x)	0	0

Då ser vi att $0 < A \leq 3$ Svar: (a) $x = 1$ (b) $0 < A \leq 3$