

Matematiikan ylioppilaskoe 24.3.2010

Lyhyt oppimäärä

Vastaukset

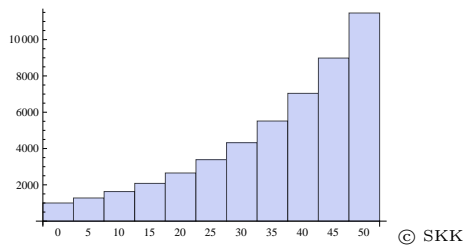
1. a) $x = \frac{12}{5}$.
b) $x_1 = 3, x_2 = -3$.
c) $x = \frac{7}{3}, y = -\frac{1}{3}$.

2. a) 1.55 m.
b) 2.031.
c) $-\frac{1}{12}$.

3. a) -2, 0.51, 2.76.
b) -1, 2.
c) 5.
d) -5.
e) $[-2, -1], [2, 3]$.
f) $[-1, 2]$.

4. 2.25 litraa.

5.

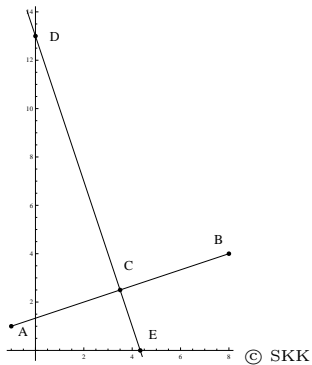


6. $\max f = \frac{1}{4}, \min f = -30$.

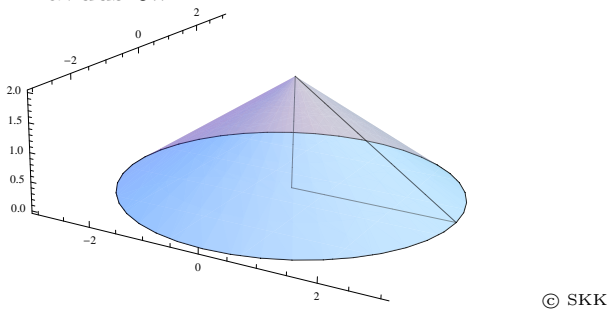
7. Hypotenuusa 6.5 cm, kärjen etäisyys 2.8 cm.

8. a) 0.0024.
b) 0.074.

9. $3x + y = 13$, leikkauspisteet $(0, 13)$, $(\frac{13}{3}, 0)$.

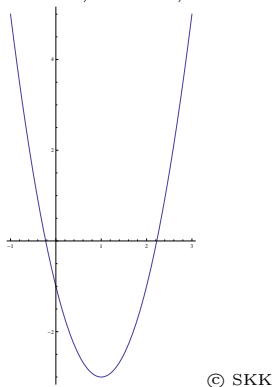


10. Tilavuus 6π .



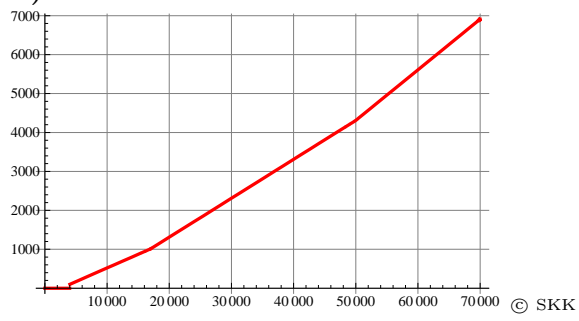
11. a) $a_1 = 1.83333333 \dots$, $a_2 = 1.46212121 \dots$, $a_3 = 1.41499843 \dots$,
 $a_4 = 1.41421378 \dots$; poikkeaa 0.000015 %.
b) $a_1 = 4.125$, $a_2 = 2.30492 \dots$, $a_3 = 1.58631 \dots$,
 $a_4 = 1.42354 \dots$; poikkeaa 0.66 %.

12. $a = 2$, $h = 1$, $k = -3$; huippu $(1, -3)$.



13. a) 2310 €.

b)



14. 4.2 %.

15. $y = \frac{5}{2}, x = \frac{5}{2 \tan 2^\circ} \approx 71.6.$