

Anwendungsaufgabe 1 - Lösung

#1:  $a(t) := \frac{1}{20} \cdot (t^3 - 450 \cdot t^2 + 16800 \cdot t + 160000)$

#2:  $A(t) := \int a(t) dt \cdot \text{und} \cdot A(0) = 0$

#3: 
$$\frac{t \cdot (t^3 - 600 \cdot t^2 + 33600 \cdot t + 640000)}{80}$$

#4:  $a(0)$

#5: 8000

#6:  $A(10)$

#7: 114625

#8:  $a(15) + a(5)$

#9: 27350

#10:  $\text{SOLVE}(a'(t) = 0, t)$

#11:  $t = 280 \vee t = 20$

#12:  $a''(20)$

#13: -39

#14:  $a(20)$

#15: 16200

#16:  $\text{SOLVE}(a(t) = 0, t)$

#17:  $t = 200 - 120 \cdot \sqrt{3} \vee t = 120 \cdot \sqrt{3} + 200 \vee t = 50$

#18:  $a'(50)$

#19: -1035

#20:  $A(50)$

#21: 590625

#22:  $\text{SOLVE}(A(t) = 534000, t)$

#23:  $t = 38.9113148 \vee t = -34.18445324 \vee t = 535.2731384 \vee t = 60$

#24:  $a(70)$

#25: -26300

#26:  $\text{SOLVE}(A(t) = 0, t)$

#27:  $t = 260 - 60 \cdot \sqrt{21} \vee t = 60 \cdot \sqrt{21} + 260 \vee t = 80 \vee t = 0$

#28:  $\frac{340500}{A(15)} \cdot A(50)$

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#29:  $1.059464131 \cdot 10^6$