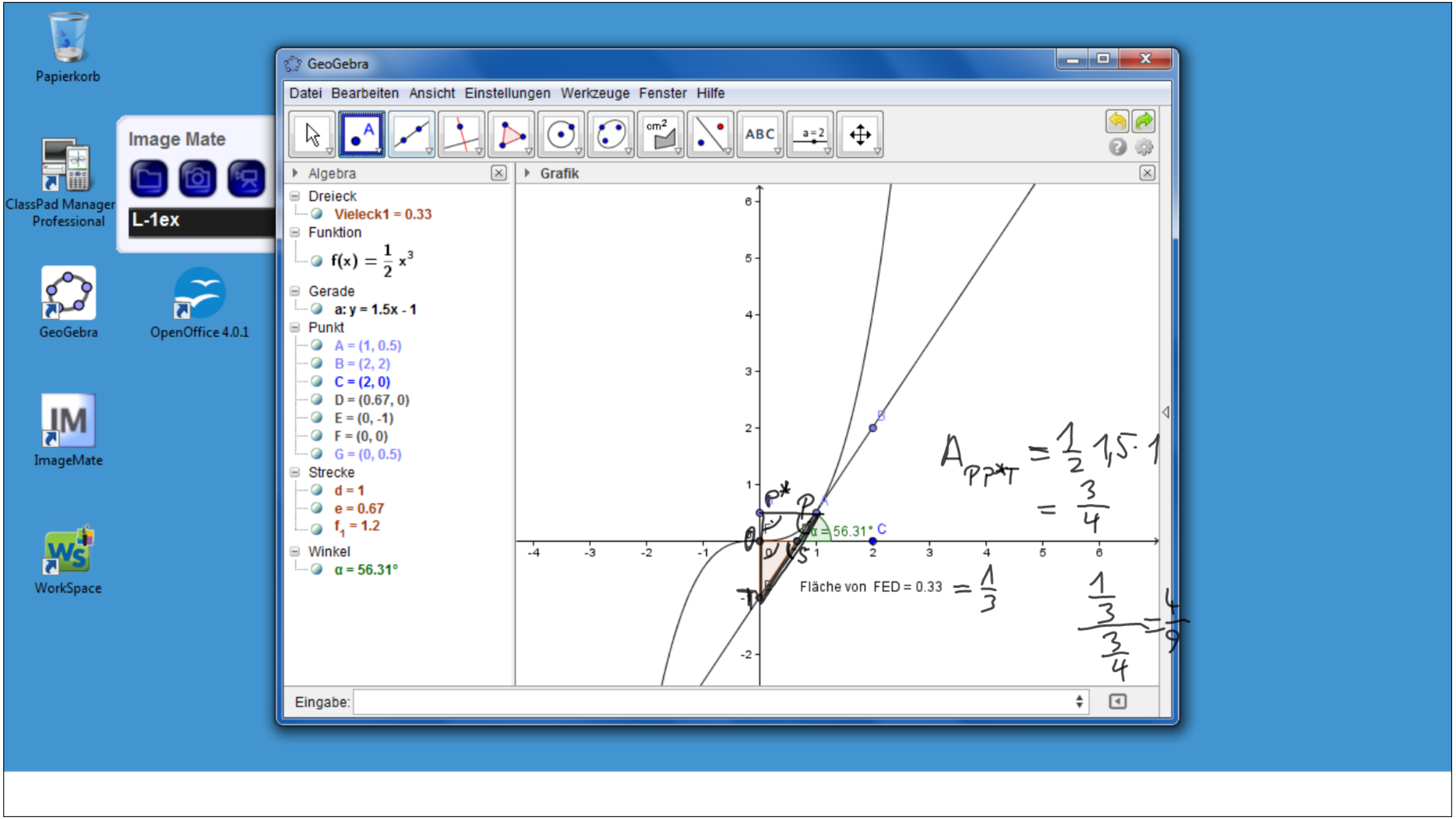
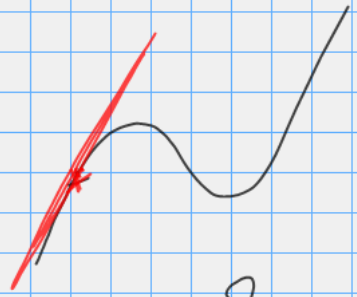

Papierkorb
Image Mate
L-1ex
ClassPad Manager Professional
GeoGebra
OpenOffice 4.0.1
ImageMate
WorkSpace
GeoGebra
Datei Bearbeiten Ansicht Einstellungen Werkzeuge Fenster Hilfe
Algebra
Dreieck
Vieleck1 = 0.33
Funktion
f(x) = 1/2 x^3
Gerade
a: y = 1.5x - 1
Punkt
A = (1, 0.5)
B = (2, 2)
C = (2, 0)
D = (0.67, 0)
E = (0, -1)
F = (0, 0)
G = (0, 0.5)
Strecke
d = 1
e = 0.67
f1 = 1.2
Winkel
α = 56.31°
Grafik
α = 56.31°
Fläche von FED = 0.33 = 1/3
A_PP*T = 1/2 1,5 · 1
= 3/4
1/3 / 3/4 = 4/9
Eingabe:

$$f(x) = \frac{1}{3}x^3 - 2x^2 + 4x - 2$$



Tangente für $x_1 = -1$ in $T_1(-1; f(-1))$

$$f'(x) = x^2 - 4x + 4$$

$$f'(-1) = 9 \Rightarrow m = 9$$

$$y = 9x + t$$

$$T_1\left(-1; -8\tfrac{1}{3}\right) \quad -8\tfrac{1}{3} = -9 + t \Rightarrow t = \frac{2}{3}$$

$$\Big\} \; y = 9x + \frac{2}{3}$$

Tangente für $x_2 = 0{,}5$ in $T_2(0{,}5; f(0{,}5))$

$$f'(0{,}5) = 2{,}25 \Rightarrow m = 2\tfrac{1}{4}$$

$$T_2\left(0{,}5; -\frac{11}{24}\right) \Rightarrow -\frac{11}{24} = \frac{9}{4} \cdot \frac{1}{2} + t$$

$$-\frac{11}{24} = \frac{9}{8} + t$$

$$-\frac{11}{24} = \frac{27}{24} + t \Rightarrow t = -\frac{38}{24} = -\frac{19}{12}$$

Tangente für $x_3 = 2$ in $T_3(2; f(2))$:

$$f'(2) = 0 \Rightarrow y = f(2) = \frac{2}{3}$$

$$y = 2\tfrac{1}{4}x - 1\tfrac{7}{12}$$

HA S. 52/1 rechte Spalte murf'