

3D - TR -Grafik mit dem TI-92Plus (Aufg. D 1. 1a-c, e-k)

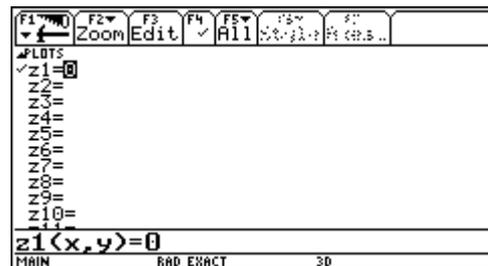
1a) $z = 0$

Wichtige Voreinstellungen sind:

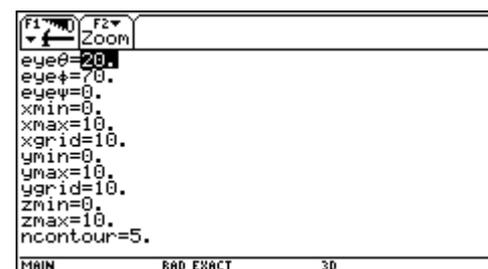
1. **MODE** - Taste: Graph ... 3D einstellen



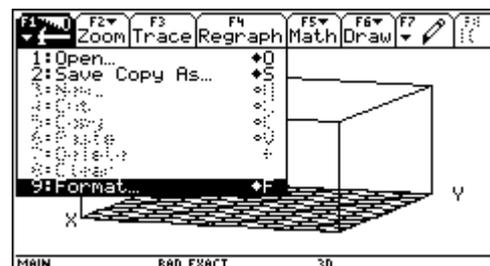
2. **Y =** - Taste: Funktion definieren



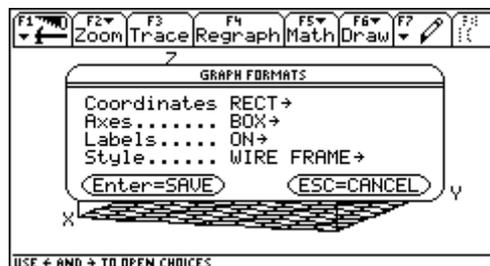
3. **WINDOW** - Taste: Box einstellen



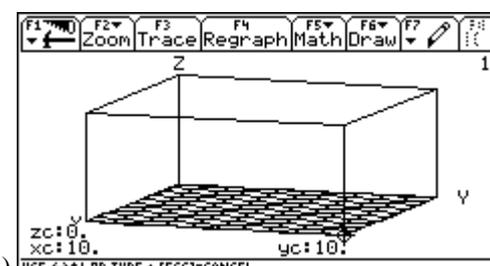
4. **GRAPH-FORMATS** einstellen (in GRAPH)



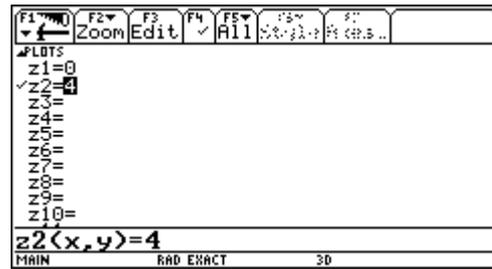
F1-Taste in GRAPH (Auswahl 9 öffnen)



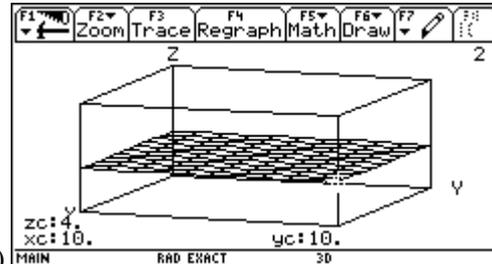
5. **GRAPH**-Taste: Fläche in 3D-Darstellung (mit F3)



1b) $z = 4$

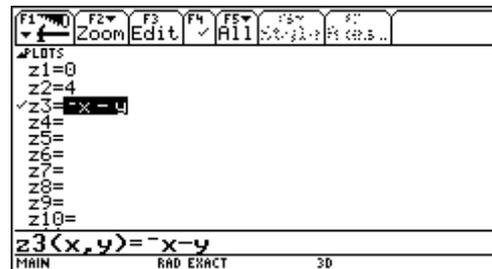


1. Y = - Taste: Funktion definieren

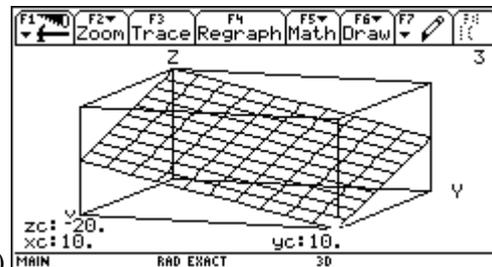


2. GRAPH-Taste: Fläche in 3D-Darstellung (mit F3)

1c) $z = -x - y$ (analog d) $z = 6 - x - 2y$)



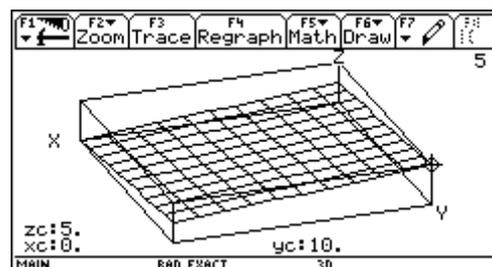
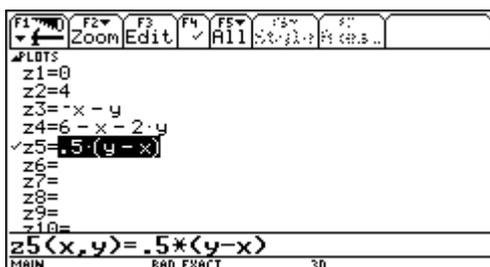
1. Y = - Taste: Funktion definieren (ZoomFit)



2. GRAPH-Taste: Fläche in 3D-Darstellung (mit F3)

1e) $x = 0$ ist nicht als Funktion $z = f(x, y)$ darstellbar.

1f) $z = 0.5 * (y - x)$



1g) $z = x^2 + y^2$

```

F1 F2 F3 F4 F5 F6 F7
Zoom Edit All
PLOTS
z1=0
z2=4
z3=-x-y
z4=6-x-2*y
z5=.5*(y-x)
z6=x^2+y^2
z7=
z8=
z9=
z6(x,y)=x^2+y^2
MAIN RAD EXACT 3D
  
```

Y :

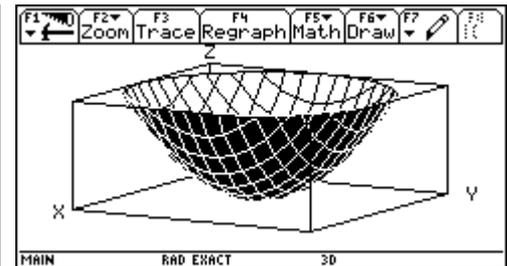
WINDOW:

```

F1 F2
Zoom
eyeθ=30.0
eyeφ=68.02
eyeψ=0.
xmin=-5.
xmax=5.
xgrid=15.
ymin=-5.
ymax=5.
ygrid=15.
zmin=0.
zmax=25.
ncontour=15.
MAIN RAD EXACT 3D
  
```

```

F1 F2
Zoom
eyeθ=30.0
eyeφ=
eyeψ=
xmin=
xmax=
xgrid=
ymin=
ymax=
ygrid=
zmin=
zmax=
ncontour=15.
GRAPH FORMATS
Coordinates RECT→
Axes..... BOX→
Labels..... ON→
Style..... HIDDEN SURFACE→
Enter=SAVE ESC=CANCEL
USE ← AND → TO OPEN CHOICES
MAIN RAD EXACT 3D
  
```



GRAPH-FORMAT:

Paraboloid (Außenfläche dunkel - „Sonne scheint von oben“)

1h) $x^2 + y^2 = 4$ ist nicht als Funktion $z = f(x, y)$ darstellbar.

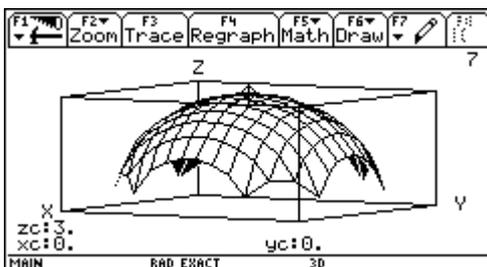
1i) $z = (9 - x^2 - y^2)^{0.5}$

```

F1 F2 F3 F4 F5 F6 F7
Zoom Edit All
PLOTS
z1=0
z2=4
z3=-x-y
z4=6-x-2*y
z5=.5*(y-x)
z6=x^2+y^2
z7=(9-x^2-y^2)^.5
z8=
z9=
z7(x,y)=sqrt(9-x^2-y^2)
MAIN RAD EXACT 3D
  
```

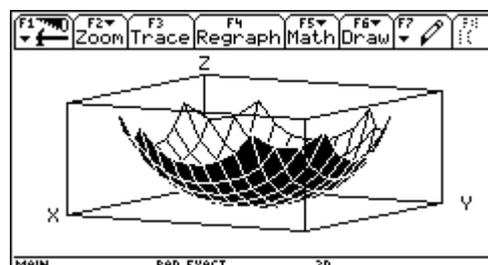
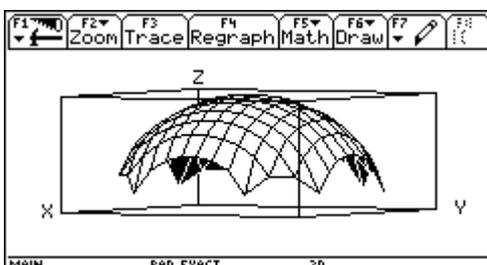
```

F1 F2
Zoom
eyeθ=30.01
eyeφ=80.05
eyeψ=0.
xmin=3.
xmax=3.
xgrid=15.
ymin=3.
ymax=3.
ygrid=15.
zmin=0.
zmax=3.
ncontour=15.
MAIN RAD EXACT 3D
  
```

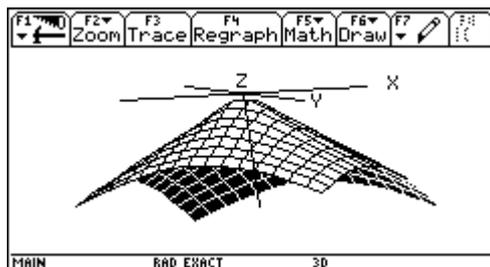
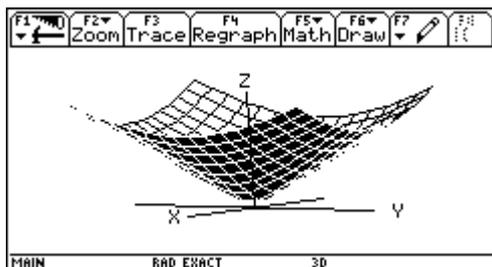


obere Halbkugel (Innenfläche dunkel, „Sonne“ oben)

1j) $z = a / \text{abs}(a) * (a^2 - x^2 - y^2)^{0.5} \mid a = 3 \text{ oder } a = -3$ (Halbkugeln)



1k) $z = a / \text{abs}(a) * (x^2 + y^2)^{0.5} \mid a = 1 \text{ oder } a = -1$ (Doppelkegel)



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