

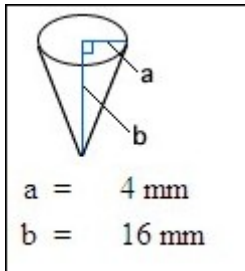
Oberflächen

Dokumentnummer: DX1017

Fachgebiet: Geometrie

Quelle für Aufgabestellungen: <http://www.edhelper.com> 2009_05_13

BEISPIEL 1



Für Kegel gilt:
Grundfläche = $\pi \cdot \text{Radius}^2$
Volumen = $\frac{1}{3} \cdot \text{Grundfläche} \cdot \text{Höhe}$
Seitenhöhe = $\sqrt{\text{Höhe}^2 + \text{Radius}^2}$
Mantelfläche = $\pi \cdot \text{Radius} \cdot \text{Seitenhöhe}$
Oberfläche = Grundfläche + Mantel

```
(%i8) kill(all);
```

```
(%o0) done
```

```
(%i1) r:4;h:16;
```

```
(%o1) 4
```

```
(%o2) 16
```

```
(%i3) s:sqrt(r**2+h**2);
```

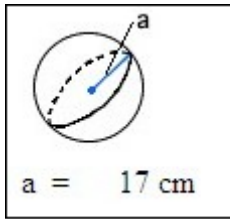
```
(%o3) 4√17
```

```
(%i4) O:r**2*pi+%pi*r*s, numer;O:floor(O*10+0.5)/10.0;
```

```
(%o4) 257.5153759520797
```

```
(%o5) 257.5
```

BEISPIEL 2



(%i6) kill(all);

(%o0) **done**

(%i1) r:17;

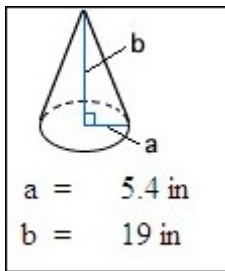
(%o1) 17

(%i2) O:4*r**2*pi, numer; O:floor(O*10+0.5)/10.0;

(%o2) 3631.681107549801

(%o3) 3631.7

BEISPIEL 3



```
(%i4) kill(all);
```

```
(%o0) done
```

```
(%i1) r:5.4;h:19;
```

```
(%o1) 5.4
```

```
(%o2) 19
```

```
(%i3) s:sqrt(r**2+h**2);
```

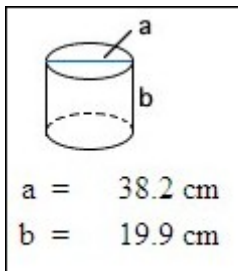
```
(%o3) 19.75246820020222
```

```
(%i4) O:r**2*pi+r*pi*s,numer;O:floor(O*10+0.5)/10.0;
```

```
(%o4) 426.7015703139934
```

```
(%o5) 426.7
```

BEISPIEL 4



```
(%i6) kill(all);
```

```
(%o0) done
```

```
(%i1) d:38.2;h:19.9;
```

```
(%o1) 38.2
```

```
(%o2) 19.9
```

```
(%i3) r:d/2;
```

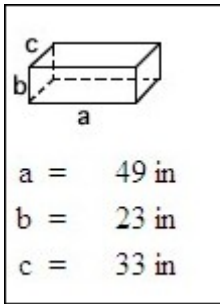
```
(%o3) 19.1
```

```
(%i8) O:2*r**2*pi+2*r*pi*h,numer;O:floor(O*10+0.5)/10.0;
```

```
(%o8) 4680.344735318075
```

```
(%o9) 4680.3
```

BEISPIEL 5

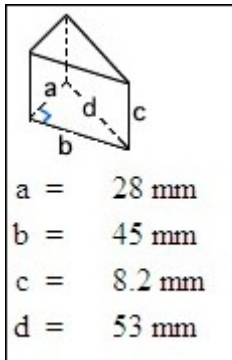


```
(%i10) kill(all);  
(%o0) done
```

```
(%i1) a:49;b:23;c:33;  
(%o1) 49  
(%o2) 23  
(%o3) 33
```

```
(%i5) o:2*(a*b+a*c+b*c);  
(%o5) 7006
```

BEISPIEL 6



(%i6) kill(all);

(%o0) **done**

(%i1) a:28;b:45;c:53;h:8.2;

(%o1) 28

(%o2) 45

(%o3) 53

(%o4) 8.199999999999999

(%i5) s:(a+b+c)/2.0;

(%o5) 63.0

(%i6) GF:sqrt(s*(s-a)*(s-b)*(s-c));

(%o6) 630.0

(%i8) O:2*GF+a*h+b*h+c*h;

(%o8) 2293.2

Created with [wxMaxima](http://www.wxMaxima.org).