```
> with(student):
  # solutions hw P 1007-09 in reverse order
>
> #37
>
> Int(Int(Int(x^2+9, z=0..2),y=0 ..2), x=0..2)/8
  = int(int(int(x^2+9, z=0..2),y=0 ..2), x=0..2)/8 ;
```

$$\frac{1}{8}\int_0^2\int_0^2\int_0^2 x^2+9\,dz\,dy\,dx=\frac{31}{3}$$

```
> #33
> Int(Int(Int(1, z=1-x/2-y/2..4-2*x-2*y),y=0 ..2-x), x=0..2)
  = int(int(int(1, z=1-x/2-y/2..4-2*x-2*y),y=0 ..2-x), x=0..2);
```

$$\int_0^2\int_0^{2-x}\int_{1-\frac{x}{2}-\frac{y}{2}}^{4-2x-2y} 1\,dz\,dy\,dx=2$$

```
> #27
> Int(Int(Int(1, z=0..3-3*x-3*y/2),y=0 ..2*(1-x)), x=0..1)
  = int(int(int(1, z=0..3-3*x-3*y/2),y=0 ..2*(1-x)), x=0..1) ;
```

$$\int_0^1\int_0^{2-2x}\int_0^{3-3x-\frac{3y}{2}} 1\,dz\,dy\,dx=1$$

```
> #23
>
> Int(Int(Int(1, z=0..y^2),y=-1 ..1), x=0..1)
  = int(int(int(1, z=0..y^2),y=-1 ..1), x=0..1)  ;
```

$$\int_0^1\int_{-1}^1\int_0^{y^2} 1\,dz\,dy\,dx=\frac{2}{3}$$

```
> #19
>
> Int(Int(Int(exp(x), x=-infinity..2*t),t=0 ..ln(sec(v))),
  v=0..Pi/4)
  = int(int(int(exp(x), x=-infinity..2*t),t=0 ..ln(sec(v))),
  v=0..Pi/4) ;
```

$$\int_0^{\frac{\pi}{4}} \int_0^{\ln(\sec(v))} \int_{-\infty}^{2t} \mathbf{e}^{x}\, dx\, dt\, dv = \frac{1}{2} - \frac{\pi}{8}$$