In[297]:=
```
θ1 := -45 * π / 180.
θ2 := 30 * π / 180.
w := 400
h := 300
n := 1
f := 100
```

In[303]:=
```
top := Tan[θ2]
bottom := -Tan[θ2]
```

In[305]:=
```
right := 4 / 3 * top
left := 4 / 3 * bottom
```

In[327]:=
```
rotationy :=
 {{Cos[θ1], 0, Sin[θ1], 0}, {0, 1, 0, 0}, {-Sin[θ1], 0, Cos[θ1], -10}, {0, 0, 0, 1}}
projection := {{2 * n / (right - left), 0, -(right + left) / (right - left), 0},
  {0, 2 * n / (top - bottom), (top + bottom) / (top - bottom), 0},
  {0, 0, -(f + n) / (f - n), -2 * f * n / (f - n)}, {0, 0, -1, 0}}
```

In[364]:=
```
vector := {.5, 1.0, -2., 1.0}
```

In[365]:=
```
eyevector := rotationy . vector
```

In[366]:=
```
eyevector
```

Out[366]=
```
{1.76777, 1., -11.0607, 1.}
```

In[367]:=
```
somve := projection.eyevector
```

In[368]:=
```
norm := Norm[somve[[1 ;; 3]]]
```

In[369]:=
```
norm
```

Out[369]=
```
9.70017
```

In[370]:=
```
vd := somve[[1 ;; 3]] / norm
```

In[371]:=
```
vd
```

Out[371]=
```
{0.236738, 0.178559, 0.955025}
```

In[372]:=
```
vp := {vd[[1]] * w / 2. + vector[[1]] + w / 2, vd[[2]] * h / 2. + vector[[2]] + h / 2.}
```

In[373]:=
```
vp
```

Out[373]=
```
{247.848, 177.784}
```