実習23.1

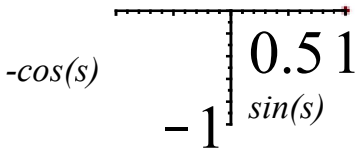
```
> with(plots):
```

(1) s(0) = Pi/2 , s'(0) = 0 の場合

```
> dsolve({diff(s(t),t,t) = -sin(s(t)), s(0) = Pi/2, D(s)(0) = 0}, numeric, output
      = listprocedure)
```

$$\left[t = \mathbf{proc}(t)\ \ldots\ \mathbf{end\ proc},\ s(t) = \mathbf{proc}(t)\ \ldots\ \mathbf{end\ proc},\ \frac{d}{dt}s(t) = \mathbf{proc}(t)\ \ldots\ \mathbf{end\ proc}\right] \quad (1)$$

```
> odeplot(%, [sin(s(t)), -cos(s(t))], t = 0..30, style = point, frames = 100, scaling
      = constrained)
```

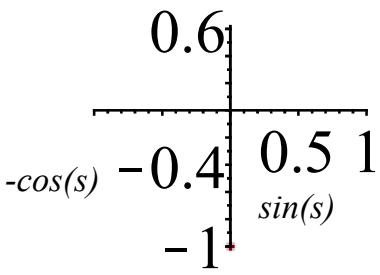


(2) s(0) = 0 , s'(0) = 1.8 の場合

```
> dsolve({diff(s(t),t,t) = -sin(s(t)), s(0) = 0, D(s)(0) = 1.8}, numeric, output
      = listprocedure)
```

$$\left[t = \mathbf{proc}(t)\ \ldots\ \mathbf{end\ proc},\ s(t) = \mathbf{proc}(t)\ \ldots\ \mathbf{end\ proc},\ \frac{d}{dt}s(t) = \mathbf{proc}(t)\ \ldots\ \mathbf{end\ proc}\right] \quad (2)$$

```
> odeplot(%, [sin(s(t)), -cos(s(t))], t = 0..30, style = point, frames = 100, scaling
      = constrained)
```

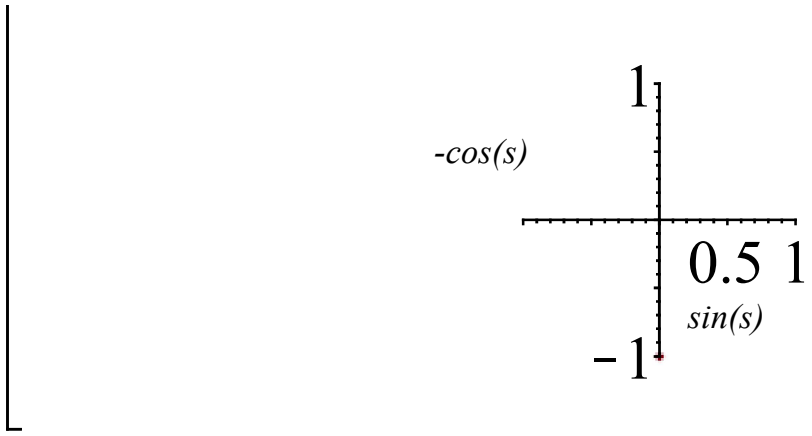


(3) s(0) = 0 , s'(0) = 2.2 の場合

```
> dsolve({diff(s(t),t,t) = -sin(s(t)), s(0) = 0, D(s)(0) = 2.2}, numeric, output
      = listprocedure)
```

$$\left[t = \mathbf{proc}(t)\ \ldots\ \mathbf{end\ proc},\ s(t) = \mathbf{proc}(t)\ \ldots\ \mathbf{end\ proc},\ \frac{d}{dt}s(t) = \mathbf{proc}(t)\ \ldots\ \mathbf{end\ proc}\right] \quad (3)$$

```
> odeplot(%, [sin(s(t)), -cos(s(t))], t = 0..30, style = point, frames = 100, scaling
      = constrained)
```


1
-cos(s)
0.5 1
sin(s)
-1