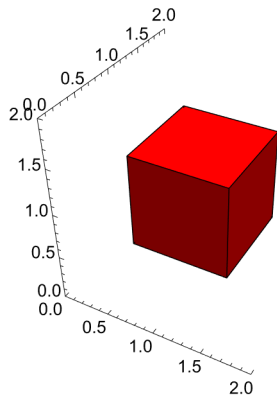


(* Bonus problems *)

(* Problem (12) The unit Cube at point {x,y,z} is depicted by Cube[{x,y,x}]
For example,*)

```
Graphics3D[{Red, Cube[{1, 1, 1}]], ImageSize → Small,  
Axes → True, Boxed → False, PlotRange → {{0, 2}, {0, 2}, {0, 2}}]
```



(* Using the results from previous problems animate a unit cube
moving along a trajectory defined by interpolating the following
data9={{0,0,0}, {1,1,1},{0,0,3},{1,1,2},{1,1,3},{2,1,1},{2,2,2}}.
Use methods introduced in problems 5 6 and 7 *)


```
data12 = {{0, 0, 0}, {1, 1, 1}, {0, 0, 3}, {1, 1, 2}, {1, 1, 3}, {2, 1, 1}, {2, 2, 2}}  
{ {0, 0, 0}, {1, 1, 1}, {0, 0, 3}, {1, 1, 2}, {1, 1, 3}, {2, 1, 1}, {2, 2, 2} }
```

```
{0, 1, 0, 1, 1, 2, 2}
```

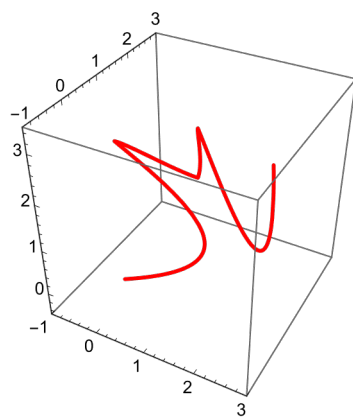
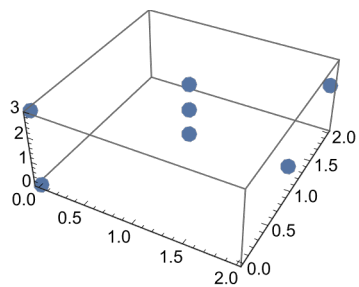
```
{0, 1, 0, 1, 1, 1, 2}
```

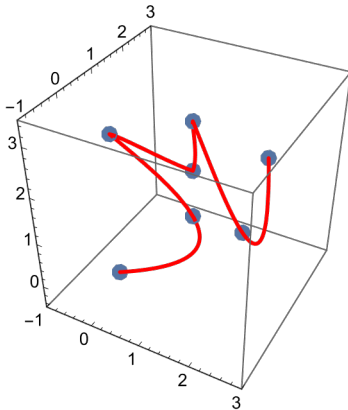
```
{0, 1, 3, 2, 3, 1, 2}
```

```
InterpolatingFunction[ Domain: {{1, 7}}  
Output: scalar]
```

InterpolatingFunction[ Domain: {{1, 7}}
Output: scalar]

InterpolatingFunction[ Domain: {{1, 7}}
Output: scalar]

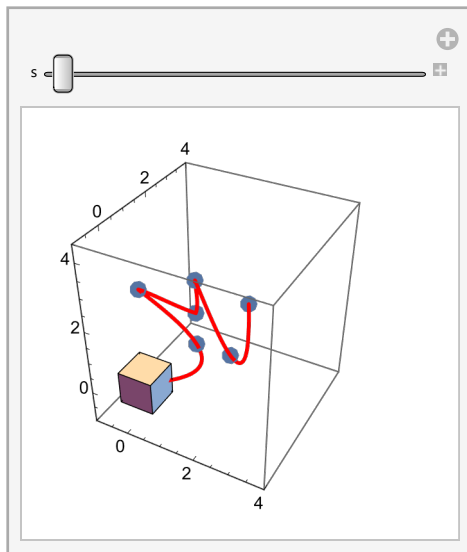




```
plot12[s_] :=
```

```
plots12[s_] :=
```

```
Show[{plot12, plot12, plot12[s]}, PlotRange -> {{-1, 4}, {-1, 4}, {-1, 4.5}}]
```



(* Problem (13). Circle[{x,y},Rc] is a 2D primitive representing a circle with radius Rc and centered at {x,y} *)

(* Animate a circle with the radius 1 originally positioned at {0,0}, rotating around another circle with the radius 3 centered at Pc1={1,2}. Use the techniques introduced in Problem 11 *)

```
Rc2 := 1
```

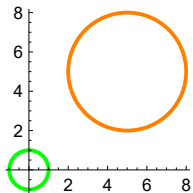
```
Rc1 := 3
```

```
Pc1 := {5, 5}
```

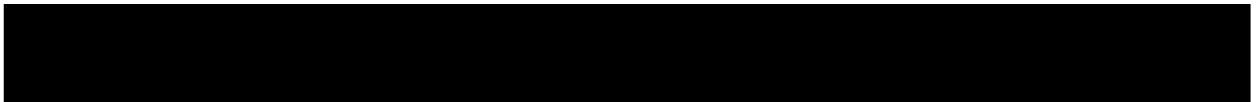
```
Circle131 = Graphics[{Orange, Thick, Circle[Pc1, Rc1]}, ImageSize → Tiny];
```

```
Circle132 = Graphics[{Green, Thick, Circle[{0, 0}, Rc2]}, ImageSize → Tiny];
```

```
Show[{Circle131, Circle132}, Axes → True]
```



(* Rotate the small circle around the big one i.e. around Pc1 *)



```
Manipulate[plot13[a]
```

