**A2Q1**

Given a list L = $[z_1, z_{2,\ldots,} z_n]$ of values, write a Maple procedure makepoly such that makepoly(L,x) outputs the polynomial $(x - z_1) \cdot (x - z_2) \cdot \ldots \cdot (x - z_n)$. Test your procedure.

```
> restart:
> makepoly := proc(L::list,x::name)
      local i,s;
      s := 1;
      for i in L do
          s := s * (x-i);
          s;
      od;
      s;
      end;
```

$$makepoly := \mathbf{proc}(L::list, x::name) \quad \textbf{(1)}$$

$$\mathbf{local}\ i, s;\ s := 1;\ \mathbf{for}\ i\ \mathbf{in}\ L\ \mathbf{do}\ s := s * (x - i);\ s\ \mathbf{end\ do};\ s$$

$$\mathbf{end\ proc}$$

```
> L := [1,2,4,2]
```

$$L := [1, 2, 4, 2] \quad \textbf{(2)}$$

```
> makepoly(L,x);
```

$$(x - 1)\ (x - 2)^2\ (x - 4) \quad \textbf{(3)}$$

```
> makepoly(L,y);
```

$$(y - 1)\ (y - 2)^2\ (y - 4) \quad \textbf{(4)}$$