```
> x[0] := 1
```

$$x_0 := 1 \tag{1}$$

```
> for k from 0 to 5 by 1 do x[k+1] := 1/2 * (x[k] + 6/x[k]) od
```

$$x_1 := \frac{7}{2}$$

$$x_2 := \frac{73}{28}$$

$$x_3 := \frac{10033}{4088}$$

$$x_4 := \frac{200931553}{82029808}$$

$$x_5 := \frac{80746825394092993}{32964753427463648}$$

$$x_6 := \frac{13040099622424999004242087300505473}{5323598378333471441307514878036928} \tag{2}$$

```
> with(Student[NumericalAnalysis]) :
> for k from 0 to 4 by 1 do RelativeError(x[k+1], x[k], digits = 10) od
```

$$0.7142857143$$
$$0.3424657535$$
$$0.06229442836$$
$$0.001944069786$$
$$0.000001889781336 \tag{3}$$

```
> for k from 0 to 4 by 1 do AbsoluteError(x[k+1], x[k], digits = 10) od
```

$$2.500000000$$
$$0.892857143$$
$$0.152886497$$
$$0.004761988$$
$$0.000004629 \tag{4}$$

```
> ε := 10^-4
```

$$\varepsilon := \frac{1}{10000} \tag{5}$$

```
> RelativeError(x[5], x[4]) < ε
```

$$0.000001889781336 < \frac{1}{10000} \tag{6}$$

```
> AbsoluteError(x[5], x[4]) < ε
```

$$0.000004629 < \frac{1}{10000} \tag{7}$$

```
>
```