```
P0:1; P1:t; P2:t^2; P3:t^3; P4:t^4;
```

Warning: Can set maxima's working directory but cannot change it during the maxi

$$1$$

$$t$$

$$t^2$$

$$t^3$$

$$t^4$$

```
'integrate(((P0·P1)·sqrt(1−t^2)),t,−1,1)=integrate(((P0·P1)·sqrt(1−t^2)),t,−1,1);
```

$$\int_{-1}^{1} t\sqrt{1-t^2}\,dt = 0$$

```
'integrate(((P0·P0)·sqrt(1−t^2)),t,−1,1)=integrate(((P0·P0)·sqrt(1−t^2)),t,−1,1);
```

$$\int_{-1}^{1} \sqrt{1-t^2}\,dt = \frac{\pi}{2}$$

```
'integrate(((P2·P1)·sqrt(1−t^2)),t,−1,1)=integrate(((P2·P1)·sqrt(1−t^2)),t,−1,1);
```

$$\int_{-1}^{1} t^3\sqrt{1-t^2}\,dt = 0$$

```
'integrate(((P1·P1)·sqrt(1−t^2)),t,−1,1)=integrate(((P1·P1)·sqrt(1−t^2)),t,−1,1);
```

$$\int_{-1}^{1} t^2\sqrt{1-t^2}\,dt = \frac{\pi}{8}$$

```
'integrate(((P0·P2)·sqrt(1−t^2)),t,−1,1)=integrate(((P0·P2)·sqrt(1−t^2)),t,−1,1);
```

$$\int_{-1}^{1} t^2\sqrt{1-t^2}\,dt = \frac{\pi}{8}$$

```
'integrate(((P3·(t^2−0.25))·sqrt(1−t^2)),t,−1,1)=integrate(((P3·(t^2−0.25))·sqrt(1−t^2)),t,−1,1
```

$$\int_{-1}^{1} t^3\sqrt{1-t^2}\,(t^2-0.25)\,dt = 0$$

```
'integrate((((t^2−0.25)·(t^2−0.25))·sqrt(1−t^2)),t,−1,1)=integrate((((t^2−0.25)·(t^2−0.25))·sq
```

rat: replaced −0.25 by −1/4 = −0.25
rat: replaced −0.25 by −1/4 = −0.25
rat: replaced 0.03125 by 1/32 = 0.03125
rat: replaced −0.1666666666666667 by −1/6 = −0.1666666666666667
rat: replaced 0.03125 by 1/32 = 0.03125
rat: replaced 0.03125 by 1/32 = 0.03125
rat: replaced −0.1666666666666667 by −1/6 = −0.1666666666666667
rat: replaced 0.03125 by 1/32 = 0.03125

$$\int_{-1}^{1} \sqrt{1-t^2}\,(t^2-0.25)^2\,dt = \frac{\pi}{32}$$

```
'integrate(((P3·P1)·sqrt(1−t^2)),t,−1,1)=integrate(((P3·P1)·sqrt(1−t^2)),t,−1,1);
```

$$\int_{-1}^{1} t^4 \sqrt{1-t^2}\,dt = \frac{\pi}{16}$$

'integrate(((P4·(P3−0.5·P1))·sqrt(1−t^2)),t,−1,1)=integrate(((P4·(P3−0.5·P1))·sqrt(1−t^2)),t

rat: replaced 0.5 by 1/2 = 0.5
rat: replaced −0.5 by −1/2 = −0.5

$$\int_{-1}^{1} t^4 \sqrt{1-t^2}\,(t^3-0.5\,t)\,dt = 0$$

'integrate((((P3−0.5·P1)·(P3−0.5·P1))·sqrt(1−t^2)),t,−1,1)=integrate((((P3−0.5·P1)·(P3−0.5

rat: replaced 0.5 by 1/2 = 0.5
rat: replaced −0.5 by −1/2 = −0.5
rat: replaced −0.5 by −1/2 = −0.5
rat: replaced 0.0078125 by 1/128 = 0.0078125
rat: replaced −0.015625 by −1/64 = −0.015625
rat: replaced 0.06249999999999999 by 1/16 = 0.0625
rat: replaced 0.0078125 by 1/128 = 0.0078125
rat: replaced 0.0078125 by 1/128 = 0.0078125
rat: replaced −0.015625 by −1/64 = −0.015625
rat: replaced 0.06249999999999999 by 1/16 = 0.0625
rat: replaced 0.0078125 by 1/128 = 0.0078125

$$\int_{-1}^{1} \sqrt{1-t^2}\,(t^3-0.5\,t)^2\,dt = \frac{\pi}{128}$$

'integrate(((P4·(t^2−0.25))·sqrt(1−t^2)),t,−1,1)=integrate(((P4·(t^2−0.25))·sqrt(1−t^2)),t,−1,

rat: replaced −0.25 by −1/4 = −0.25
rat: replaced −0.25 by −1/4 = −0.25
rat: replaced 0.0234375 by 3/128 = 0.0234375
rat: replaced −0.046875 by −3/64 = −0.046875
rat: replaced −0.0625 by −1/16 = −0.0625
rat: replaced 0.0234375 by 3/128 = 0.0234375
rat: replaced 0.0234375 by 3/128 = 0.0234375
rat: replaced −0.046875 by −3/64 = −0.046875
rat: replaced −0.0625 by −1/16 = −0.0625
rat: replaced 0.0234375 by 3/128 = 0.0234375

$$\int_{-1}^{1} t^4 \sqrt{1-t^2}\,(t^2-0.25)\,dt = \frac{3\,\pi}{128}$$

'integrate(((P4·P1)·sqrt(1−t^2)),t,−1,1)=integrate(((P4·P1)·sqrt(1−t^2)),t,−1,1);

$$\int_{-1}^{1} t^5 \sqrt{1-t^2}\,dt = 0$$