```
> restart: with(LinearAlgebra):
> akv:=< a*k_x*v_x|
         a*k_y*v_y|
         a*k_z*v_z|
         a*k_z*v_y + a*k_y*v     _z|
         a*k_x*v_z + a*k_z*v_x|
         a*k_y*v_x + a*k_x*v_y>      ;
```

$$akv := [a\ k\_x\ v\_x,\ a\ k\_y\ v\_y,\ a\ k\_z\ v\_z,\ a\ k\_z\ v\_y + a\ k\_y\ v\_z,\ a\ k\_x\ v\_z + a\ k\_z\ v\_x,\ a\ k\_y\ v\_x + a\ k\_x\ v\_y]$$

```
> B_2:=<<B1xx/2, B1yy/2, B1yy/2, 0,0,0>|
       <B1yy/2, B1xx/2, B1yy/2, 0,0,0>|
       <B1yy/2, B1yy/2, B1xx/2, 0,0,0>|
       <0,0,0, B4yz,0,0>|
       <0,0,0, 0,B4yz,0>|
       <0,0,0, 0,0,B4yz>>    ;
```

$$B\_2 := \begin{bmatrix} \frac{1}{2} B1xx & \frac{1}{2} B1yy & \frac{1}{2} B1yy & 0 & 0 & 0 \\ \frac{1}{2} B1yy & \frac{1}{2} B1xx & \frac{1}{2} B1yy & 0 & 0 & 0 \\ \frac{1}{2} B1yy & \frac{1}{2} B1yy & \frac{1}{2} B1xx & 0 & 0 & 0 \\ 0 & 0 & 0 & B4yz & 0 & 0 \\ 0 & 0 & 0 & 0 & B4yz & 0 \\ 0 & 0 & 0 & 0 & 0 & B4yz \end{bmatrix}$$

```
> t := <t1, t2, t3, t4, t5, t6>;
```

$$t := \begin{bmatrix} t1 \\ t2 \\ t3 \\ t4 \\ t5 \\ t6 \end{bmatrix}$$

```
> ans:=Multiply(VectorMatrixMultiply(akv,B_2),t);
```

$$ans := t1 \left(\frac{1}{2} a\ k\_x\ v\_x\ B1xx + \frac{1}{2} a\ k\_y\ v\_y\ B1yy + \frac{1}{2} a\ k\_z\ v\_z\ B1yy \right) + t2 \left(\frac{1}{2} a\ k\_x\ v\_x\ B1yy + \frac{1}{2} a\ k\_y\ v\_y\ B1xx + \frac{1}{2} a\ k\_z\ v\_z\ B1yy \right) + t3 \left(\frac{1}{2} a\ k\_x\ v\_x\ B1yy + \frac{1}{2} a\ k\_y\ v\_y\ B1yy + \frac{1}{2} a\ k\_z\ v\_z\ B1xx \right) + t4\ (a\ k\_z\ v\_y + a\ k\_y\ v\_z)\ B4yz + t5\ (a\ k\_x\ v\_z + a\ k\_z\ v\_x)\ B4yz$$

$$+ t6\ (a\ k\_y\ v\_x + a\ k\_x\ v\_y)\ B4yz$$

```
> subs(v_x=0, v_z=0, t2=0, t3=0, t4=0, t5=0, t6=0, ans);
```

$$\frac{1}{2}\ t1\ a\ k\_y\ v\_y\ B1yy$$

```
> subs(v_x=0, v_z=0, t1=0, t3=0, t4=0, t5=0, t6=0, ans);
```

$$\frac{1}{2}\ t2\ a\ k\_y\ v\_y\ B1xx$$

```
> subs(v_x=0, v_z=0, t1=0, t2=0, t4=0, t5=0, t6=0, ans);
```

$$\frac{1}{2}\ t3\ a\ k\_y\ v\_y\ B1yy$$

```
> subs(v_x=0, v_z=0, t1=0, t2=0, t3=0, t5=0, t6=0, ans);
```

$$t4\ a\ k\_z\ v\_y\ B4yz$$

```
> subs(v_x=0, v_z=0, t1=0, t2=0, t3=0, t4=0, t6=0, ans);
```

$$0$$

```
> subs(v_x=0, v_z=0, t1=0, t2=0, t3=0, t4=0, t5=0, ans);
```

$$t6\ a\ k\_x\ v\_y\ B4yz$$

```
>
```