```
In[•]:= R_{i_,j_} := Expand[T^{-1/2} (a_i a_j + d_i a_j + T a_i d_j - (1 - T) kc_i kb_j - T d_i d_j)];
        Rbar_{i_,j_} := Expand[T^{1/2} (a_i a_j + d_i a_j + T^{-1} a_i d_j - (1 - T^{-1}) kc_i kb_j - T^{-1} d_i d_j)];
        C_{i_} := Expand[T^{-1/2} (ka_i + kd_i)]; Cbar_{i_} := Expand[T^{1/2} (ka_i + kd_i)];

In[•]:= R_{i,j} (ka_1 - kd_1) // m_{j,1→j}

Out[•]= a_i ka_j/√T + d_i ka_j/√T - b_j kc_i/√T + √T b_j kc_i - √T a_i kd_j + √T d_i kd_j

In[•]:= Rbar_{i,j} (ka_1 - kd_1) // m_{j,1→j}

Out[•]= √T a_i ka_j + √T d_i ka_j + b_j kc_i/√T - √T b_j kc_i - a_i kd_j/√T + d_i kd_j/√T

In[•]:= Factor[a_i ka_j/√T + d_i ka_j/√T - b_j kc_i/√T + √T b_j kc_i - √T a_i kd_j + √T d_i kd_j]

Out[•]= -(-a_i ka_j - d_i ka_j + b_j kc_i - T b_j kc_i + T a_i kd_j - T d_i kd_j)/√T

In[•]:= Expand[T^{1/2} (a_i ka_j/√T + d_i ka_j/√T - b_j kc_i/√T + √T b_j kc_i - √T a_i kd_j + √T d_i kd_j)]

Out[•]= a_i ka_j + d_i ka_j - b_j kc_i + T b_j kc_i - T a_i kd_j + T d_i kd_j

In[•]:= Expand[T^{-1/2} (√T a_i ka_j + √T d_i ka_j + b_j kc_i/√T - √T b_j kc_i - a_i kd_j/√T + d_i kd_j/√T)]

Out[•]= a_i ka_j + d_i ka_j - b_j kc_i + b_j kc_i/T - a_i kd_j/T + d_i kd_j/T

In[•]:= R_{i_,j_} := Expand[a_i ka_j/√T + d_i ka_j/√T - b_j kc_i/√T + √T b_j kc_i - √T a_i kd_j + √T d_i kd_j];
        Rbar_{i_,j_} := Expand[√T a_i ka_j + √T d_i ka_j + b_j kc_i/√T - √T b_j kc_i - a_i kd_j/√T + d_i kd_j/√T];
        C_{i_} := Expand[T^{-1/2} (ka_i + kd_i)]; Cbar_{i_} := Expand[T^{1/2} (ka_i + kd_i)];

In[•]:= Simplify[R_{i,j} == T^{-1/2} (a_i ka_j - T a_i kd_j + (T - 1) b_j kc_i + d_i ka_j + T d_i kd_j)]

Out[•]= True

In[•]:= Simplify[Rbar_{i,j} == T^{1/2} (a_i ka_j - T^{-1} a_i kd_j + (T^{-1} - 1) b_j kc_i + d_i ka_j + T^{-1} d_i kd_j)]

Out[•]= True
```

Some bad news:

In[•]:=
```
φ1 = {a1 → 1 / 2, b1 → 0, c1 → 0, d1 → 1 / 2, ka1 → 0, kb1 → 0, kc1 → 0, kd1 → 0};
Simplify[{R1,2, R1,2 R4,3 // m1,4→1} /. φ1]
```

Out[•]=
$$\left\{\frac{ka_2}{\sqrt{T}}, \frac{ka_2\, ka_3}{T} + T\, kd_2\, kd_3\right\}$$

In[•]:=
```
φ3 = {a3 → 1 / 2, b3 → 0, c3 → 0, d3 → 1 / (2 T), ka3 → 0, kb3 → 0, kc3 → 0, kd3 → 0};
Simplify[{R1,3, R2,3 R1,4 // m3,4→3} /. φ3]
```

Out[•]=
$$\left\{0, \frac{a_1\,((1+T)\,a_2-(-1+T)\,d_2)+d_1\,(-((-1+T)\,a_2)+(1+T)\,d_2)}{2\,T}\right\}$$