```
In[•]:= n = 3

Out[•]= 3


In[•]:= coord = {r, θ, ϕ}

Out[•]= {r, θ, ϕ}


In[•]:= metric = {{1, 0, 0}, {0, r², 0}, {0, 0, r² Sin[θ]²}}

Out[•]= {{1, 0, 0}, {0, r², 0}, {0, 0, r² Sin[θ]²}}


In[•]:= inversemetric = Simplify[Inverse[metric]]
```

$$Out[•]= \left\{\{1, 0, 0\}, \left\{0, \frac{1}{r^2}, 0\right\}, \left\{0, 0, \frac{Csc[\theta]^2}{r^2}\right\}\right\}$$

```
In[•]:= affine := affine = Simplify[Table[(1/2)*Sum[(inversemetric[[i, s]])*
            (D[metric[[s, j]], coord[[k]]] +
                D[metric[[s, k]], coord[[j]]] - D[metric[[j, k]], coord[[s]]]), {s, 1, n}],
          {i, 1, n}, {j, 1, n}, {k, 1, n}]]

In[•]:= listaffine :=
        Table[If[UnsameQ[affine[[i, j, k]], 0], {ToString[Γ[i, j, k]], affine[[i, j, k]]}],
          {i, 1, n}, {j, 1, n}, {k, 1, j}]

In[•]:= TableForm[Partition[DeleteCases[Flatten[listaffine], Null], 2],
        TableSpacing → {2, 2}]
```

Out[•]//TableForm=

Γ[1, 2, 2]	$-r$
Γ[1, 3, 3]	$-r\,Sin[\theta]^2$
Γ[2, 2, 1]	$\frac{1}{r}$
Γ[2, 3, 3]	$-Cos[\theta]\,Sin[\theta]$
Γ[3, 3, 1]	$\frac{1}{r}$
Γ[3, 3, 2]	$Cot[\theta]$