```matlab
 1 function A = A_pend(in1,in2)
 2 %A_PEND
 3 %     A = A_PEND(IN1,IN2)
 4
 5 %     This function was generated by the Symbolic Math Toolbox version 8.2.
 6 %     30-Oct-2021 16:25:16
 7
 8 I1 = in2(:,7);
 9 I2 = in2(:,8);
10 c1 = in2(:,1);
11 c2 = in2(:,2);
12 l1 = in2(:,5);
13 m1 = in2(:,3);
14 m2 = in2(:,4);
15 th2 = in1(2,:);
16 t2 = cos(th2);
17 t3 = l1.*t2;
18 t4 = c2+t3;
19 t5 = c2.*m2.*t4;
20 t6 = c2.^2;
21 t7 = m2.*t6;
22 A = reshape([I1+t7+c1.^2.*m1+l1.^2.*m2+c2.*l1.*m2.*t2.*2.0,t5,t5,I2+t7],[2,2]);
23
```