Inverse equations: transfer from standard hue angle $h_{ab,s}$ to CIELAB hue angle h_{ab}

Given: standard hue angle $h_{ab,s}$ (0 <= $h_{ab,s}$ <= 360)

CIELAB hue angles $h_{ab,s,X}$ of six standard colours *sX = RJGC'BM'*

Aim: CIELAB hue angle h_{ab} of the given colour (0 <= h_{ab}<= 360)

Remark:

The standard hue angle $h_{ab,s}$ is usually calculated from the data rgb^*_3

relative red-green chroma in system s $\quad a^*_{rs} = r^*_3 \cos(30) + g^*_3 \cos(150)$

relative yellow-blue chroma in system s $\quad b^*_{rs} = r^*_3 \sin(30) + g^*_3 \sin(150) + b^*_3 \sin(270)$

hue angle in standard system s $\quad h_{ab,s} = \arctan [b^*_{rs} / a^*_{rs}]$

Calculate CIELAB hue angle h_{ab} in one of seven possible cases for $h_{ab,s}$ (0 <= $h_{ab,s}$ < 360):

If $0 <= h_{ab,s} < 30$	$h_{ab} = h_{ab,s,M'} + [h_{ab,s}+360 - h_{ab,s,M'}]\,[h_{ab,s,R}+360 - h_{ab,s,M'}]/60$	(1i)
If $30 <= h_{ab,s} < 90$	$h_{ab} = h_{ab,s,R} + [h_{ab,s} - h_{ab,s,R}]\,[h_{ab,s,J} - h_{ab,s,R}]/60$	(2i)
If $90 <= h_{ab,s} < 150$	$h_{ab} = h_{ab,s,J} + [h_{ab,s} - h_{ab,s,J}]\,[h_{ab,s,G} - h_{ab,s,J}]/60$	(3i)
If $150 <= h_{ab,s} < 210$	$h_{ab} = h_{ab,s,G} + [h_{ab,s} - h_{ab,s,G}]\,[h_{ab,s,C'} - h_{ab,s,G}]/60$	(4i)
If $210 <= h_{ab,s} < 270$	$h_{ab} = h_{ab,s,C'} + [h_{ab,s} - h_{ab,s,C'}]\,[h_{ab,s,B} - h_{ab,s,C'}]/60$	(5i)
If $270 <= h_{ab,s} < 330$	$h_{ab} = h_{ab,s,B} + [h_{ab,s} - h_{ab,s,B}]\,[h_{ab,s,M'} - h_{ab,s,B}]/60$	(6i)
If $330 <= h_{ab,s} < 360$	$h_{ab} = h_{ab,s,M'}+360 + [h_{ab,s} - h_{ab,s,M'}]\,[h_{ab,s,R}+ 360 - h_{ab,s,M'}]/60$	(7i)
only if $h_{ab} >= 360$ then:	$h_{ab} = h_{ab} - 360 \qquad 0 <= h_{ab} <= 360$	(8i)