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In this file, we verify some of the computations related with the preliminary results for general trees.
We first prove (v) for deg v=1.

> $Nv := 1 + Nw$

$$Nv := 1 + Nw \tag{1}$$

> $Nv2 := Nw + Nw2$

$$Nv2 := Nw + Nw2 \tag{2}$$

> $Rv := Nv + Rw$

$$Rv := 1 + Nw + Rw \tag{3}$$

> $Rv2 := Rw + Rw2$

$$Rv2 := Rw + Rw2 \tag{4}$$

> $simplify(Nv \cdot Nv2 + Nv2 - 3 \cdot Rv2 - (Nw^2 + 2\,Nw + Nw2 - 3 \cdot Rw) - (Nw2\,Nw + Nw2 - 3\,Rw2))$

$$0 \tag{5}$$

Here we verify the computation for (vi) when deg v=1.

> $simplify(3 \cdot (Nv2 \cdot Rv - Nv \cdot Rv2) - Nv2 \cdot (Nv + Nv2) - (Nv \cdot Nv2 + Nv2 - 3 \cdot Rv2) - (3 \cdot (Nw2 \cdot Rw - Nw \cdot Rw2) - Nw2 \cdot (Nw + Nw2)))$

$$0 \tag{6}$$

Finally, we verify (vi) when deg v \ge 2.
Instead of N_1, N_2 and overline N_1, overline N_2, we use Na,Nb,Na1 and Na2 resp.

> $Nv := Na \cdot Nb$

$$Nv := Na\,Nb \tag{7}$$

> $Nv2 := Na2 + Nb2$

$$Nv2 := Na2 + Nb2 \tag{8}$$

> $Rv := Ra \cdot Nb + Rb \cdot Na - Na \cdot Nb$

$$Rv := -Na\,Nb + Rb\,Na + Ra\,Nb \tag{9}$$

> $Rv2 := Ra2 + Rb2$

$$Rv2 := Ra2 + Rb2 \tag{10}$$

> $F := (3 \cdot (Na2 \cdot Ra - Na \cdot Ra2) - Na2 \cdot (Na + Na2)) \cdot Nb + (3 \cdot (Nb2 \cdot Rb - Nb \cdot Rb2) - Nb2 \cdot (Nb + Nb2)) \cdot Na + ((Nb - 1)\,Na2^2 + (Na - 1)\,Nb2^2)$

$$F := (-3\,Na\,Ra2 + 3\,Na2\,Ra - Na2\,(Na + Na2))\,Nb + (-3\,Nb\,Rb2 + 3\,Rb\,Nb2 - Nb2\,(Nb + Nb2))\,Na + (Nb - 1)\,Na2^2 + (Na - 1)\,Nb2^2 \tag{11}$$

> $G := ((3\,Rb - 3\,Nb) \cdot Na - Nb2)\,Na2 + ((3\,Ra - 3\,Na) \cdot Nb - Na2)\,Nb2$

$$G := ((-3\,Nb + 3\,Rb)\,Na - Nb2)\,Na2 + ((3\,Ra - 3\,Na)\,Nb - Na2)\,Nb2 \tag{12}$$

> $simplify(3 \cdot (Nv2 \cdot Rv - Nv \cdot Rv2) - Nv2 \cdot (Nv + Nv2) - F - G)$

$$0 \tag{13}$$

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