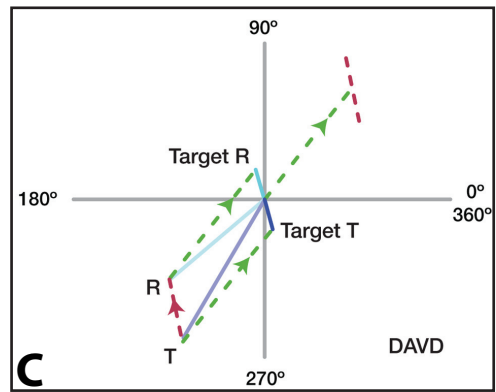
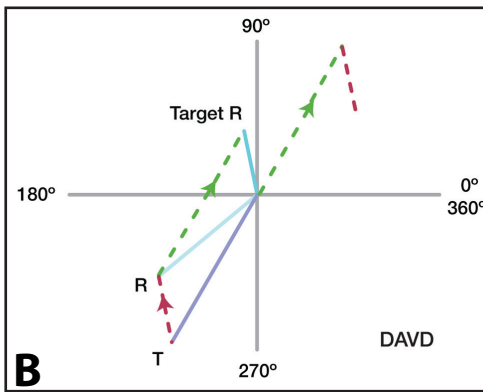


**Figure 13-3.** (A) DAVIDs (with corresponding emphasis bars, lower left) show refractive (R) and topographic (T) astigmatism vectors, with planned treatments aimed at correcting 100% of refractive astigmatism, (B) 100% of corneal astigmatism, and (C) a 50-50 midpoint treatment.



refractive astigmatism. It is important to note that with the Vector Planning approach, there is always a targeted spherical equivalent of zero in the postoperative refraction – where the patient is spectacle free and least likely to notice any reduction in their vision.

## IRREGULAR ASTIGMATISM: VECTOR PLANNING APPROACH × 2

As many as 40% of “normal” corneas with a toric refractive error can be said to have primary irregular astigmatism.<sup>28</sup> Irregularity may exist across the corneal hemidivision as a difference in dioptric magnitude (asymmetry) or orientation (nonorthogonal) or both. I have described topographic disparity (TD) as a tool for quantifying corneal irregularity.<sup>29</sup> TD is the dioptric separation between the two corneal hemidivisions as shown on a 720° DAVID, described in greater detail in Chapter 16. Irregularity is said to be significant in eyes with a TD > 1.00 D, which is found in 44% of eyes with treatable astigmatism.<sup>28,29</sup>

The Vector Planning approach can be applied to formulate separate surgical plans and unique targeted induced astigmatism vector values for each hemidivision. Inevitably, excimer lasers will be able to deliver the separate hemidivisional treatment required. The goal will be what I call reduction and regularization, which is described in Chapter 17. The reward will be better visual acuity and enhanced overall visual performance.