Gradient – Self assessment

Activity 1

1   Calculate the size of the angle of slope y if the VI on the map is 20 m and the HE 160 m

2   Calculate the size of the angle of slope y if the VI on the map is 10 m and the HE 118 m.

Activity 2

This activity relates to the 1:50 000 map 2930CB PIETERMARITZBURG in appendix D.

The Comrades marathon which is run annually between Pietermaritzburg and Durban draws long-distance athletes from all over the world. Polly Shorts, the rise just outside Pietermaritzburg on the old Durban road (R103) (see squares D5 and E5) is a well-known uphill which has defeated many athletes running from Durban to Pietermaritzburg. If you follow the route taken by the road through Polly Shorts from where it passes through the Mkhondeni spruit to where it crosses the 740 m contour line, you will see that the straightline map distance between the contour lines is a constant 5 mm. Calculate the slope of the road through Polly Shorts.