23. $\angle C = 180° - 82° - 52° = 46°$, so by the Law of Sines, $\dfrac{AC}{\sin 52°} = \dfrac{AB}{\sin 46°} \quad \Leftrightarrow$

$AC = \dfrac{AB \cdot \sin 52°}{\sin 46°}$, so substituting we have $AC = \dfrac{200 \cdot \sin 52°}{\sin 46°} \approx 219$ ft.

25. (a) Let a be the distance from satellite to the tracking station A in miles. Then the subtended angle at the satellite is $\angle C = 180° - 93° - 84.2° = 2.8°$, and so $a = \dfrac{50 \cdot \sin 84.2°}{\sin 2.8°} \approx 1018$ mi.

(b) Let d be the distance above the ground in miles. Then $d = 1018.3 \cdot \sin 87° \approx 1017$ mi.