EXERCISE X.

1. $A = 53° 8'$, $B = 59° 29'$, $C = 67° 23'$.
2. 38·68. 3. 2·78.
4. $A = 48° 49'$, $B = 93° 27'$, $c = 34·39$.
5. 747 rods. 6. 1·64 m.; 17° 31′ east of N.
7. 2·62 m.; 3·39 m.

EXERCISE XI.

1. $\frac{4}{5}, \frac{56}{65}, \frac{12}{13}$. 2. 156·4 rods. 3. 1344.
4. 50° 56′ or 129° 4′. 6. 90°.
7. 13·13, 17° 27′, 23° 35′, 138° 58′.
8. 108·25. 9. 52·5. 10. $\frac{1}{2}\sqrt{2c^2+2a^2-b^2}$.
11. $\sin\varphi = 4\Delta / b\sqrt{2c^2+2a^2-b^2}$; etc.
17. 1168·5 yds. 18. 18·3 ft. 19. 23 m. 1379·8 ft.

EXERCISE XI A.

1. $\Delta = 2·62$ $L = 4·538$.
2. Length of side = 380·23 rods, making with the meridian angle $\tan^{-1} 0·0087$ west of north.
3. (*a*) For fourth corner $\Delta = 157·47$, $L = 7·89$.
   (*b*) Diagonals, $AC = 119·7$, $N.\ 57° 26' E.$;
   $BD = 134·9$, $N.\ 109° 4' E.$
   (*c*) 6333 sq. rods.
4. 22·87 miles.

EXERCISE XII.

1. 26·31; 25° 42′ with the greater force.
2. 100. 3. $\theta = 75° 31'$; $\varphi = 28° 57'$.
4. 0·8962 f; 0·4436 f, where f is force along the string.
5. 0·9316.