Trigonometry
Solutions to Student Exercises

1. 0.5878
2. 0.2079
3. 2.6051
4. 0.1880
5. 0.9063
6. 36°
7. 65°
8. 80°
9. 11°
10. 46°
11. 17°
12. 8°
13. 73°
14. 46°
15. 37°
16. 30°
17. 71°
18. 14°
19. 58°
20. 77°
21. 930 w.
22. 594 w.
23. 38.5
24. 11.2
25. 833 Ω
26. 30.5
27. 2828 w.
28. 1768 w.
29. 236 V.
30. 10.5 Ω
31. 81° 99°
32. 66°
33. $\frac{3}{5}$
34. $\frac{4}{5}$
35. $\frac{3}{4}$
36. $\frac{4}{5}$
37. $\frac{3}{5}$
38. $\frac{4}{3}$

TRIGONOMETRY

Sine (Sin) of an angle = $\frac{\text{side opposite}}{\text{Hypotenuse}}$

Cosine (Cos) of an angle = $\frac{\text{side adjacent}}{\text{Hypotenuse}}$

Tangent (Tan) of an angle = $\frac{\text{side opposite}}{\text{side adjacent}}$

PROBLEMS

Find the values of the following functions.

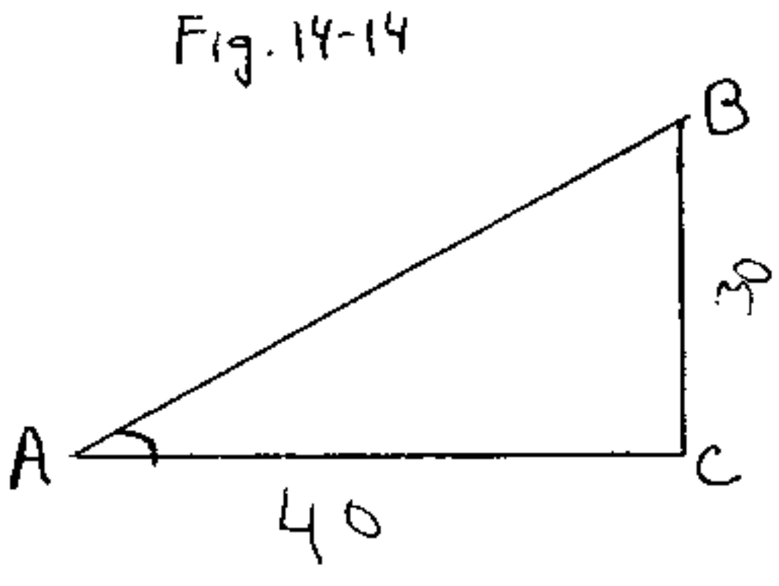
1. $\sin 36°$ 2. $\cos 78°$ 3. $\tan 69°$ 4. $\sin 52°$ 5. $\cos 25°$

Find angle A, correct to the nearest degree.

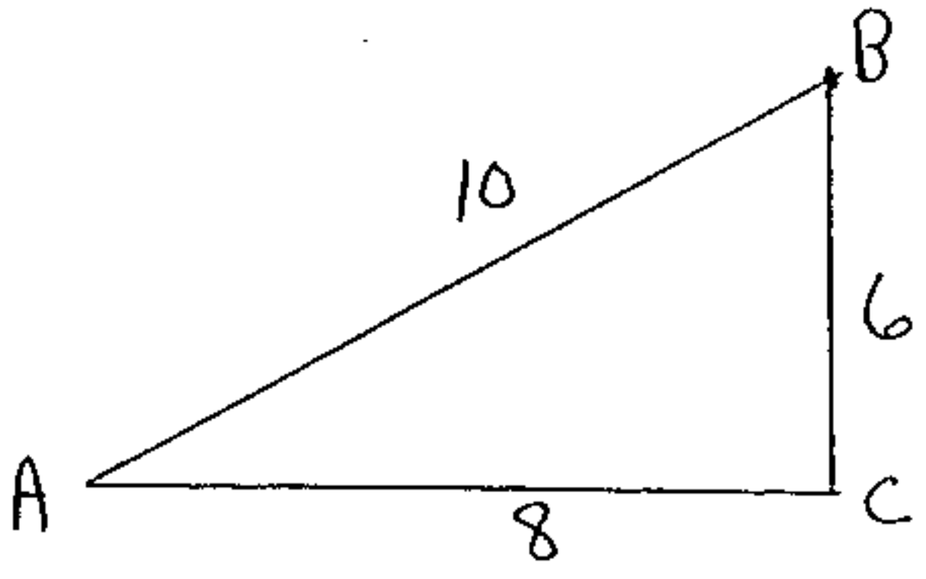
6. $\sin A = 0.5878$ 7. $\cos A = 0.4226$ 8. $\tan A = 5.7500$
9. $\cos A = 0.9800$ 10. $\sin A = 0.7200$ 11. $\tan A = 0.3113$
12. $\tan A = 0.1340$ 13. $\cos A = 0.2868$ 14. $\sin A = 0.7240$

Use the triangle shown in Fig. 14-14 for the following problems:

15. Find $\angle A$ if $BC = 30$ and $AC = 40$.
16. Find $\angle B$ if $AC = 50$ and $AB = 100$.
17. Find $\angle B$ if $BC = 25$ and $AB = 75$.
18. Find $\angle A$ if $BC = 16$ and $AB = 65$.
19. Find $\angle B$ if $AC = 22.5$ and $BC = 14$.
20. Find $\angle A$ if $AC = 4.5$ and $AB = 20.5$
21. Find BC if $AB = 2200$ W and $\angle A = 25°$.
22. Find AC if $AB = 600$ W and $\angle A = 8°$.
23. Find AB if $BC = 28.6$ and $\angle B = 42°$.
24. Find AB if $AC = 9.3\ \Omega$ and $\angle A = 34°$.
25. Find BC if $AC = 750\ \Omega$ and $\angle A = 48°$.
26. Find AC if $BC = 17.6$ ft and $\angle B = 60°$.
27. Find AC if $AB = 4000$ W and $\angle B = 45°$.
28. Find BC if $AB = 2500$ W and $\angle A = 45°$.
29. Find AB if $BC = 142$ V and $\angle A = 37°$.
30. Find AC if $AB = 85.8\ \Omega$ and $\angle A = 83°$.
31. A pipe must be bent to provide a 6-ft rise in a 1-ft horizontal distance. Find the angle at each bend.
32. The foot of a ladder 30 ft long rests on the ground 12 ft from the side of a building. What angle does the ladder make with the ground?



Use the figure for #33-38. Write your answer as a fraction in lowest terms.



33. Sin A=

34. Cos A=

35. Tan A=

36. Sin B=

37. Cos B=

38. Tan B=