

EXERCISES 1-3

Express in decimal form.

- A** 1. 3.10×10^{-2} 2. 6.06×10^{-1} 3. 4.00×10^{-3}
 4. 9.020×10^2 5. 2.100×10^1 6. 6.30×10^{-4}

In Exercises 7–14, (a) express in scientific notation and (b) state the number of significant digits.

7. 106.0 8. 0.0021 9. 0.0340 10. 40.10
 11. 102.30 12. 0.0005 13. 321 14. 0.321

Use Table 1 to find the following to four decimal places.

15. $\cos 60^\circ$ 16. $\sin 73^\circ$ 17. $\tan 41^\circ$ 18. $\cot 78^\circ$

Use a calculator, Table 1, or Table 2 to find the following to four significant digits.

19. $\sin 13.7^\circ$ 20. $\cos 42.5^\circ$ 21. $\csc 68.6^\circ$ 22. $\sec 27.2^\circ$
 23. $\cot 18^\circ 20'$ 24. $\tan 71^\circ 40'$ 25. $\cos 23^\circ 30'$ 26. $\sin 80^\circ 30'$

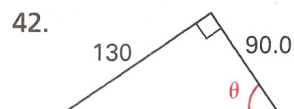
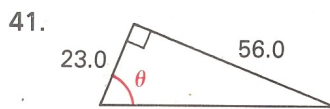
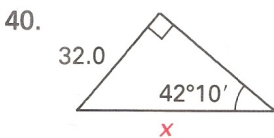
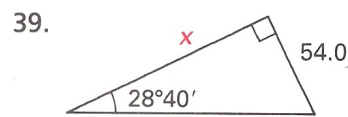
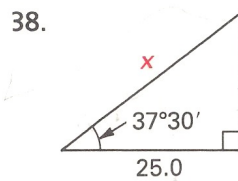
Use Table 1 to find the measure of the acute angle θ to the nearest degree.

27. $\sin \theta = 0.2950$ 28. $\cos \theta = 0.6401$ 29. $\cot \theta = 0.4101$ 30. $\tan \theta = 4.000$

Use a calculator or Table 1 to find the measure of the acute angle θ to the nearest 0.1° .

31. $\cos \theta = 0.9300$ 32. $\sin \theta = 0.2006$ 33. $\tan \theta = 1.575$
 34. $\cot \theta = 0.4043$ 35. $\sec \theta = 3.000$ 36. $\csc \theta = 1.692$

Find x or θ in each right triangle.



43. A ladder 4.20 m long is leaning against a building. The foot of the ladder is 1.75 m from the building. Find the angle the ladder makes with the ground and the distance it reaches up the building.
44. What is the angle of elevation of the sun when a building 38.6 m tall casts a shadow 24.5 m long?

45. From the top of a vertical lakeside tower 106 m high, the angle of depression of a rowboat is 32.5° . How far is the boat from the bottom of the tower?
46. A ramp is to be built to a loading dock 2.10 m high. How long must the ramp be if the angle it makes with the ground is to be 20.0° ?

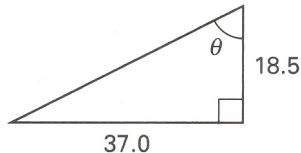
Self Quiz

1-1

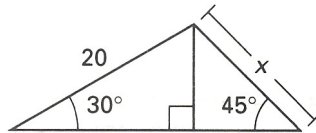
1-2

1-3

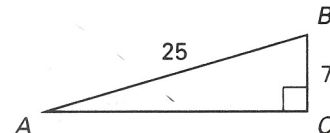
1. Find θ in the figure at the left below to the nearest 0.1° .



Exercise 1



Exercise 2



Exercise 3

- Find the exact value of x in the middle figure above.
- Find the six trigonometric functions of $\angle A$ in the figure at the right above.
- Find angles between 0° and 360° that are coterminal with (a) 550°
(b) -140° .
- Find the acute angle α if $\cos \alpha \csc 65^\circ = 1$.
- Express in scientific notation: (a) 0.00650 (b) 304.00
- (a) Write $1^\circ 32' 24''$ in decimal degrees. (b) $32.67^\circ = 32^\circ ?' ?''$.