

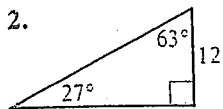
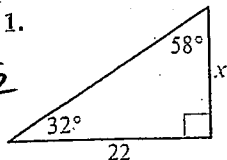
Key

Written Exercises

Find the value of x to the nearest tenth. Use a calculator or the table on page 311.

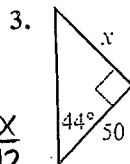
$$\tan 32^\circ = \frac{x}{22}$$

$$x = 13.7$$



$$\tan 63^\circ = \frac{x}{12}$$

$$x = 23.6$$

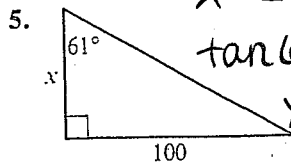
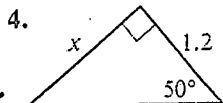


$$\tan 44^\circ = \frac{x}{50}$$

$$x = 48.3$$

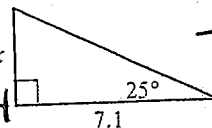
$$\tan 50^\circ = \frac{x}{1.2}$$

$$x = 1.4$$



$$\tan 61^\circ = \frac{x}{100}$$

$$x = 55.4$$



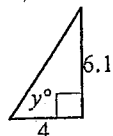
$$\tan 25^\circ = \frac{x}{7.1}$$

$$x = 3.3$$

Find y° correct to the nearest degree.

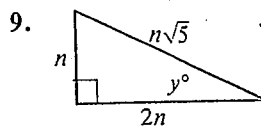
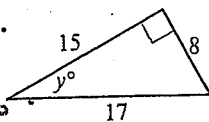
$$\tan y^\circ = \frac{6.1}{4}$$

$$y = 57^\circ$$



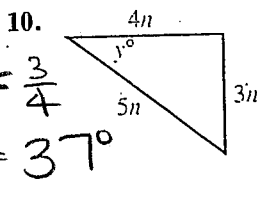
$$\tan y^\circ = \frac{8}{17}$$

$$y = 25^\circ$$



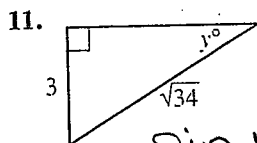
$$\tan y^\circ = \frac{1}{2}$$

$$y = 27^\circ$$



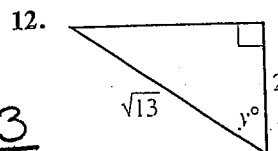
$$\tan y^\circ = \frac{3}{4}$$

$$y = 37^\circ$$



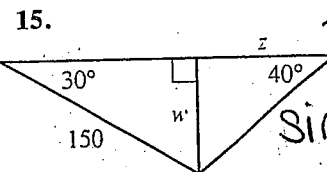
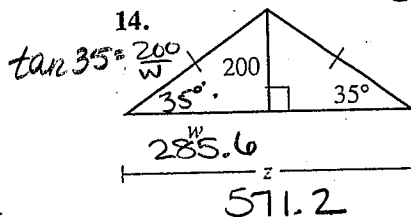
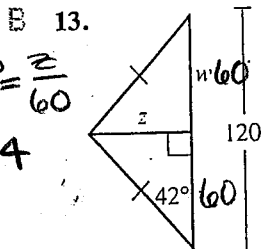
$$\sin y^\circ = \frac{3}{\sqrt{34}}$$

$$y = 31^\circ$$



$$\cos y^\circ = \frac{2}{\sqrt{13}}$$

$$y = 56^\circ$$

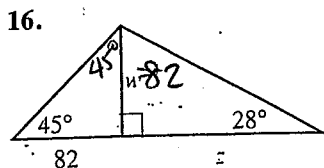
Find w , then z , correct to the nearest integer.

$$\tan 40^\circ = \frac{z}{w}$$

$$z = 89.4$$

$$\sin 30^\circ = \frac{w}{150}$$

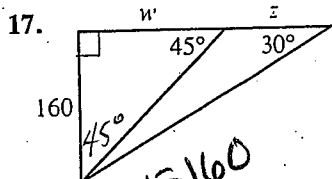
$$w = 75$$



$$w = 82$$

$$\tan 28^\circ = \frac{82}{z}$$

$$z = 154$$

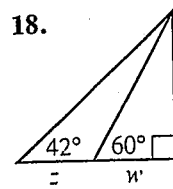


$$w = 160$$

$$w + z = 160\sqrt{3}$$

$$w + z = 277$$

$$277 - 160 = 117$$



$$\frac{900}{\sqrt{3}} = \frac{w}{\sqrt{3}}$$

$$w = 300\sqrt{3}$$

$$\tan 42^\circ = \frac{900}{x}$$

$$x = 1,000$$

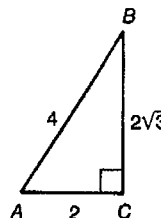
$$z = 480$$

Practice 33 Trigonometry

Lessons 8-5 through 8-7

Express the following as fractions in simplest form.

1. $\sin A = \frac{2\sqrt{3}}{4} = \frac{\sqrt{3}}{2}$ 2. $\cos A = \frac{2}{4} = \frac{1}{2}$
 3. $\tan A = \frac{2\sqrt{3}}{2} = \sqrt{3}$ 4. $\sin B = \frac{2}{4} = \frac{1}{2}$
 5. $\cos B = \frac{2\sqrt{3}}{4} = \frac{\sqrt{3}}{2}$ 6. $\tan B = \frac{2}{2\sqrt{3}} = \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$



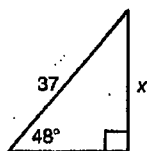
Exs. 1-6

Use a scientific calculator or the table on page 311 of the text to complete the following statements.

7. $\sin 70^\circ \approx .94$ 8. $\cos 32^\circ \approx .85$
 9. $\tan 14^\circ \approx .25$ 10. $\sin 76^\circ \approx 0.9744$
 11. $\cos 8^\circ \approx 0.9903$ 12. $\tan 61^\circ \approx 1.8040$

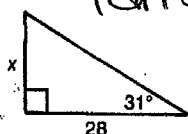
Use a scientific calculator or the table on page 311 of the text to find the value of x . Find lengths correct to the nearest integer and angles correct to the nearest degree.

13.



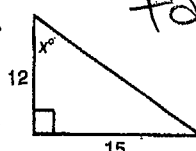
$x = 27.5$

14.



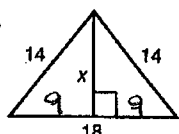
$x = 16.8$

15.



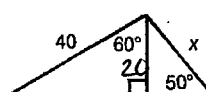
$x = 51.3$

16.



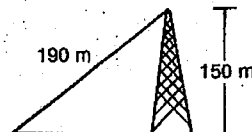
$x = \sqrt{115}$

17.



$x = 26.1$

18. A support wire is attached to the top of a 150 m radio tower. The wire is 190 m long. What is the angle, to the nearest degree, that the wire makes with the ground?

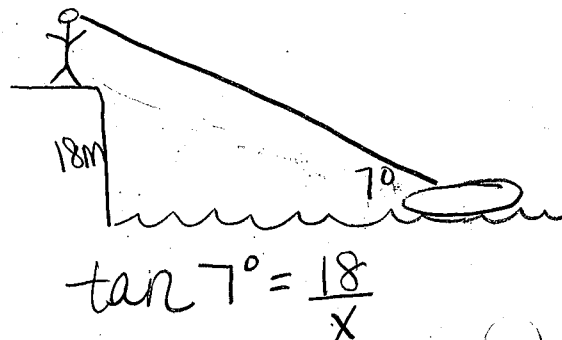


$\sin x = \frac{150}{190}$

19. A woman standing on a cliff at the edge of the ocean spots a raft. Her eye level is 18 m above sea level and the angle of depression is 7° .

a. Make a sketch.

- b. To the nearest 10 m, find the distance from the raft to the base of the cliff.



$\tan 7^\circ = \frac{18}{x}$