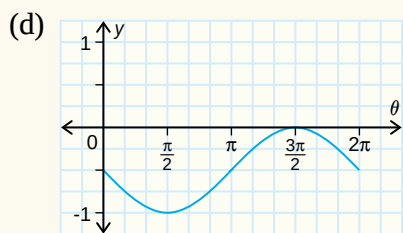
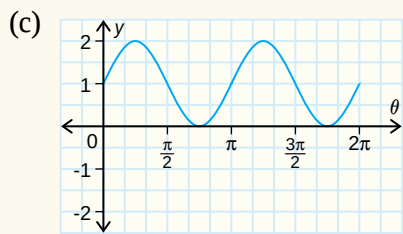
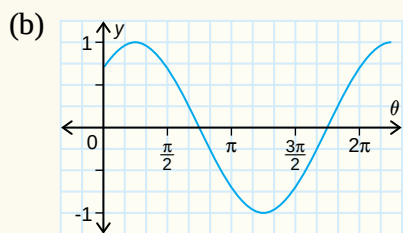
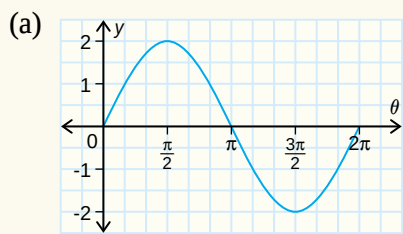


Getting Ready

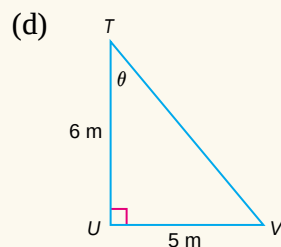
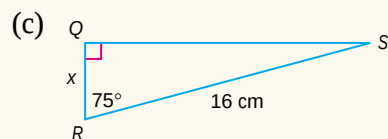
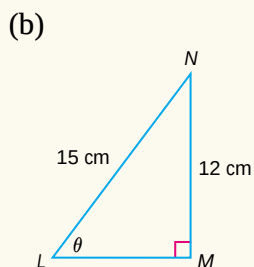
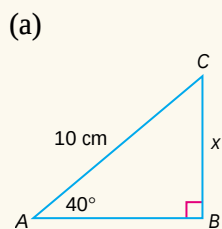
In this chapter, you will be working with the sine law and the cosine law, and solving trigonometric equations. These exercises will help you warm up for the work ahead.

- Evaluate to four decimal places.
 - $\sin 48^\circ$
 - $\cos 12^\circ$
 - $\tan 140^\circ$
 - $\sin 220^\circ$
 - $\cos \frac{\pi}{12}$
 - $\sin \frac{5\pi}{6}$
 - $\tan \frac{3\pi}{2}$
 - $\cos 4.5$
- Express each radian measure in degrees. Answer to one decimal place.
 - $\frac{3\pi}{4}$
 - $\frac{11\pi}{9}$
 - 3.5
 - 5.85
- Express each degree measure in radians.
 - 45°
 - 210°
 - 140°
 - 340°
- In each case, P is a point on the terminal arm of θ , an angle in standard position.
 - Sketch θ .
 - Determine the primary trigonometric ratios of θ .
 - Determine θ to the nearest degree.
 - $P(6, 8)$
 - $P(-2, 4)$
 - $P(-2, -5)$
 - $P(1, -2)$
- Determine θ , $0^\circ \leq \theta \leq 360^\circ$.
 - $\sin \theta = 1$
 - $\cos \theta = -1$
 - $\tan \theta = 1$
 - $\cos \theta = 0$
 - $\cos \theta = 0.5$
 - $\sin \theta = -0.5$
 - $\sin \theta = 0$
 - $\tan \theta = -1$
- Solve for θ , $0^\circ \leq \theta \leq 360^\circ$. Answer to one decimal place.
 - $3 \sin \theta = -1$
 - $-3 \cos \theta = 2$
 - $2 \tan \theta = 4$
 - $-2 \sin \theta - 1 = 1$
- Solve for θ , where $0 \leq \theta \leq 2\pi$. Answer to one decimal place.
 - $-4 \cos \theta + 3 = 2$
 - $1 + \tan \theta = 0$
 - $6 + 5 \sin \theta = 5$
 - $6 = 2 + 8 \cos \theta$
- State the amplitude, period, phase shift, and vertical shift of each function.
 - $y = \sin 3x$
 - $y = 3 \cos \left(x + \frac{\pi}{2}\right)$
 - $y = \frac{1}{2} \tan x - 1$
 - $y = -2 \sin 0.5(x - 30^\circ) + 2$
 - $y = \tan 3x$
 - $y = \cos \left(2x + \frac{\pi}{2}\right)$
- Graph each equation, $0 \leq \theta \leq 2\pi$.
 - $y = \sin \theta$
 - $y = \cos \theta$
 - $y = \tan \theta$
 - $y = \cos 2\theta$
 - $y = \sin \theta + 2$
 - $y = -2 \sin \left(\theta - \frac{\pi}{4}\right)$
 - $y = \tan \left(\theta + \frac{\pi}{2}\right)$
 - $y = \sin (0.5\theta) - 1$

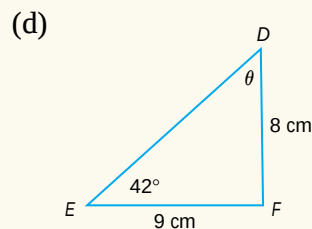
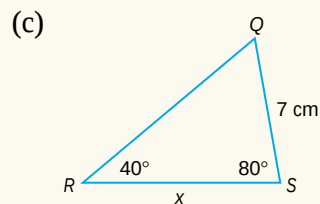
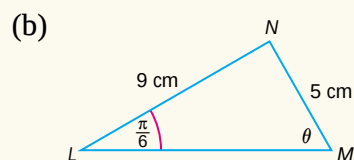
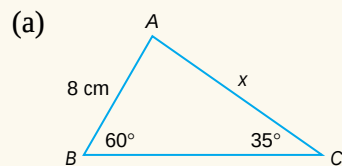
- 10.** Determine the function that defines each graph.



- 11.** Find the value of each variable to the nearest tenth.

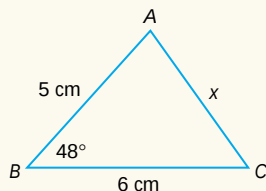


- 12.** Use the sine law to find the value of each variable to the nearest tenth. All angles are acute.

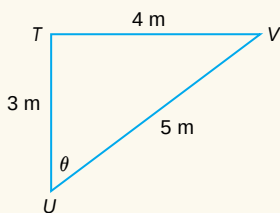


- 13.** Use the cosine law to find the value of each variable to the nearest tenth.

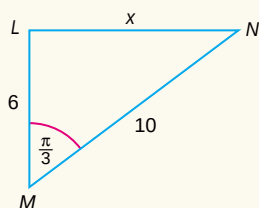
(a)



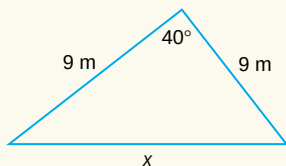
(b)



(c)



(d)



- 14.** Solve each triangle.

- (a) $\triangle ABC$, $\angle B = 90^\circ$, $\angle C = 33^\circ$,
 $AC = 4.9$ cm
(b) $\triangle DEF$, $e = 3$ cm, $\angle F = 64^\circ$,
 $\angle E = 49^\circ$
(c) $\triangle GHI$, $g = 7$ cm, $i = 6$ cm,
 $\angle H = 43^\circ$

- 15.** Factor fully.

- (a) $x^2 - 64$
(b) $x^2 + 12x + 35$
(c) $6x^2 - 13x - 5$
(d) $4x^2 - 20x + 25$
(e) $2x^3 - 4x$
(f) $8x^2 + 10x - 3$
(g) $x^2 - 9x + 14$
(h) $x^2 - 3x - 40$

- 16.** Determine the roots of each quadratic equation.

- (a) $x^2 + 4x - 21 = 0$
(b) $x^2 - 11x + 24 = 0$
(c) $5x^2 - 8x = 0$
(d) $x^2 + 3x - 54 = 0$
(f) $2x^2 - 9x = 5$
(g) $6x^2 = 7x - 2$