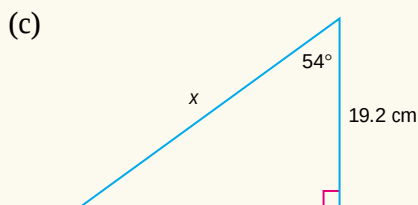
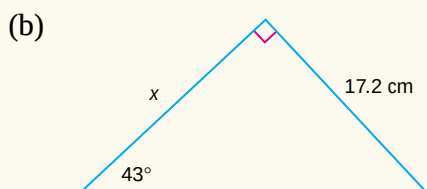
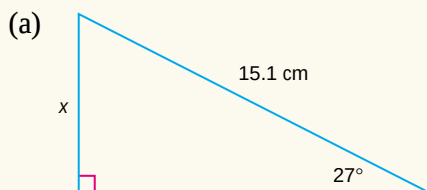


Getting Ready

In this chapter, you will learn more about the trigonometry of right triangles. As well, you will investigate a special type of nonlinear model that applies to many cyclical, real-life situations.

These exercises will help you warm up for the work ahead.

1. Solve for x to one decimal place.



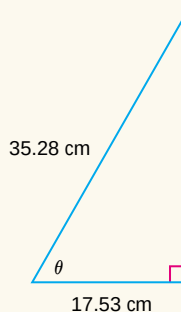
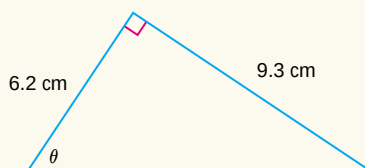
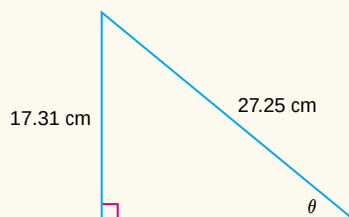
2. Evaluate to three decimal places.

- (a) $27 \sin 50^\circ$ (b) $106 \cos 87^\circ$
 (c) $23 \cos 63^\circ$ (d) $76.5 \sin 45^\circ$
 (e) $5.3 \tan 23^\circ$ (f) $2.8 \tan 80^\circ$

3. Solve for angle θ to the nearest degree, $0^\circ \leq \theta \leq 90^\circ$.

- (a) $\sin \theta = \frac{1}{2}$ (b) $\cos \theta = \frac{\sqrt{3}}{2}$
 (c) $\tan \theta = \sqrt{3}$ (d) $\sin \theta = 0.937$
 (e) $\cos \theta = 0.253$ (f) $\tan \theta = 57.287$

4. Solve for θ to the nearest degree.



5. A rectangular field is 30 m by 25 m. Calculate the length of the diagonal to one decimal place.
6. Point $P(6, 7)$ is on the circumference of a circle centred at the origin. What is the radius of the circle?

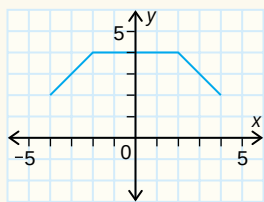
7. Write the simplified general term for each sequence.

- (a) 1, 3, 5, 7, ...
- (b) -7, -3, 1, 5, ...
- (c) 17, 26, 35, 44, ...
- (d) -3.25, -2.75, -2.25, -1.75, ...
- (e) $\frac{7}{8}, \frac{1}{2}, \frac{1}{8}, -\frac{1}{4}, \dots$
- (f) $0^\circ, 180^\circ, 360^\circ, 540^\circ, \dots$
- (g) $-135^\circ, 45^\circ, 225^\circ, 405^\circ, \dots$
- (h) $-90^\circ, -30^\circ, 30^\circ, 90^\circ, \dots$

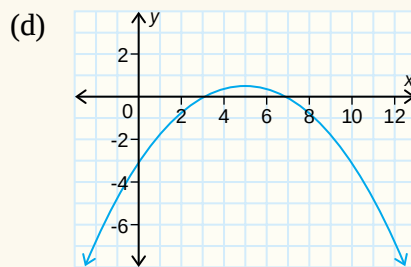
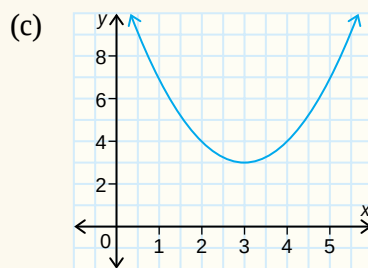
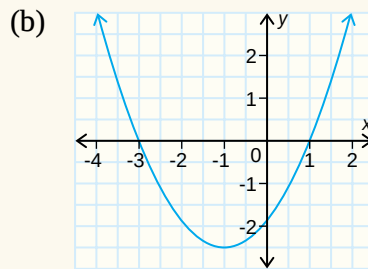
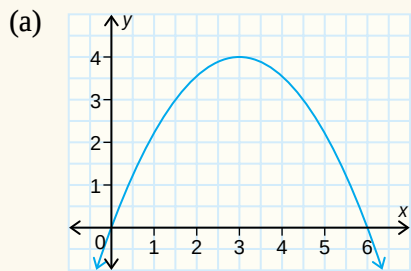
8. Let $f(x) = x^2$. Use transformations on $y = f(x)$ to sketch each graph.

- (a) $y = f(x) + 2$ (b) $y = f(x) - 3$
- (c) $y = 2f(x)$ (d) $y = 0.5f(x)$
- (e) $y = f(x - 1)$ (f) $y = f(x + 2)$
- (g) $y = -f(x)$ (h) $y = f(2x)$

9. The graph of $y = f(x)$ is shown. Sketch the graph of $y = -3f[(2(x - 1))] + 1$.



10. State the coordinates of the maximum or the minimum value and identify the zeros of each function.



11. Solve each equation.

- (a) $4x = 1$
- (b) $3x + 2 = 1$
- (c) $5m + 3 = 6$
- (d) $3n = n + 1$
- (e) $5v - \sqrt{3} = 3v$
- (f) $z - 1 = -z$
- (g) $5p + 1 = 3p$
- (h) $3x + 5 = 4x - 7$