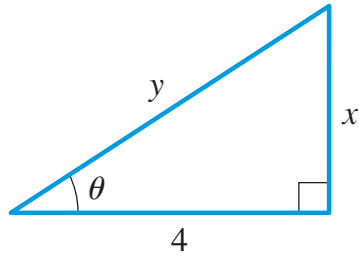
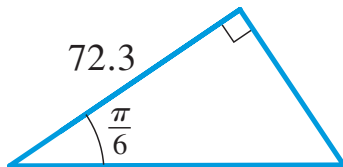


Directions Answer all questions in the space provided. Show all work and box your final answers. Answers with no work shown will not receive full credit. Answers do not need to be simplified unless specifically stated. Good luck!

1. (10 points) Express x and y in terms of trigonometric ratios of θ .



2. (10 points) Fill in the missing side lengths on the following triangle exactly.

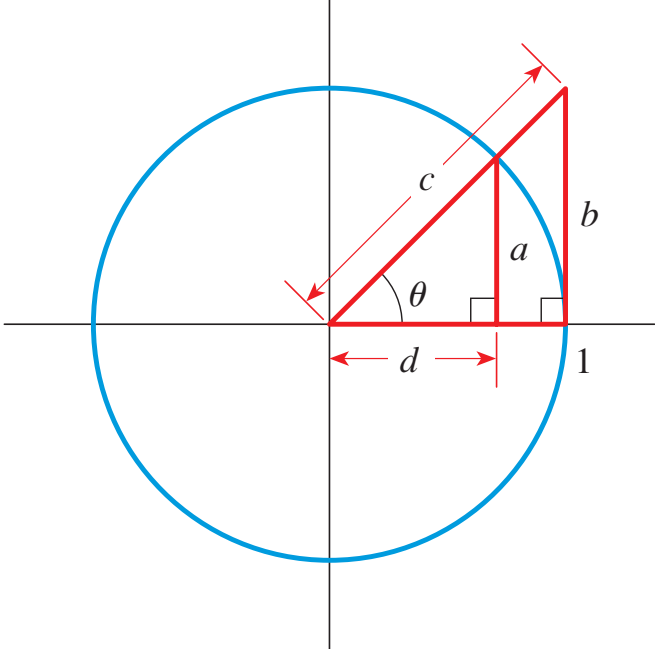


3. (10 points) Find the reference angle for each of the following angles.

(a) 800°

(b) $\frac{23\pi}{7}$ rad

4. (10 points) Express the lengths a, b, c and d in the figure in terms of the trigonometric ratios of θ .



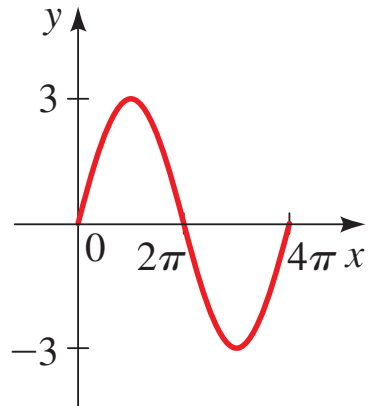
5. (10 points) Consider the function $f(x) = 2 - 2 \sin(\pi(x - 1/2))$.

(a) What is the amplitude of f ?

(b) What is the period of f ?

(c) Sketch the graph of f .

6. (10 points) The graph of one complete period of a sine or cosine curve is given.



(a) Find the amplitude, period, and horizontal shift.

(b) Write an equation that represents the curve in the form $y = a \sin(b(x - h))$.

7. Evaluate each of the following expressions.

(a) $\sin^{-1}(\sin(7\pi/6))$

(b) $\cos^{-1}(\cos(5\pi/3))$