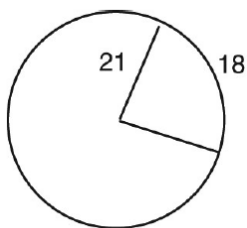
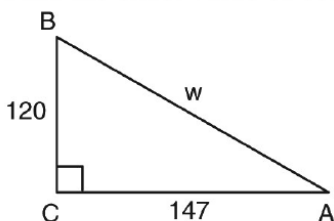


## Practice Problems for Exam 1

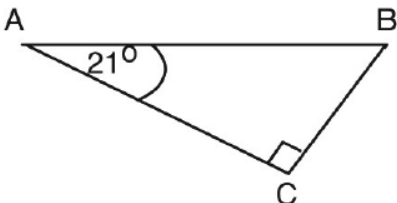
1. Convert  $155^\circ$  to radians. Leave answer as multiples of  $\pi$ .
2. Convert the radian  $-\frac{3\pi}{5}$  to degrees.
3. Find the measure, to the nearest degree, of the acute angle in the figure below.



4. Find the area of a sector of a circle intercepted by an angle of  $150^\circ$  in a circle of radius 5.3 cm.
5. Find the exact value of  $\cos A$ ,  $\sec A$ , and  $\cot A$  for the figure below.



6. Solve the following right triangle:



Solve each equation. Assume that all angles are acute angles.

7.  $\sin(4B + 12^\circ) = \cos(6B - 8^\circ)$
8.  $\sec(18x) = \csc(6x)$

Evaluate each expression. Give exact (non-decimal) values. Rationalize denominator when applicable.

9.  $\cot 120^\circ$
10.  $3 \sin^2 210^\circ + \tan 150^\circ$
11.  $4(\csc 60^\circ)(\sin 300^\circ) - \tan^2 240^\circ$

Answers:

1.  $\frac{31\pi}{36}$

2.  $-108^\circ$

3.  $49^\circ$

4.  $36.8 \text{ cm}^2$

5.  $\csc A = \frac{w}{120};$

$$\sec A = \frac{w}{147};$$

$$\cot A = \frac{147}{120}$$

6.  $B = 69^\circ, a = 54, b = 140$

7. 8.6

8. 3.75

9.  $-\frac{\sqrt{3}}{3}$

10.  $\frac{9-4\sqrt{3}}{12}$

11.  $-7$