5-2 Practice
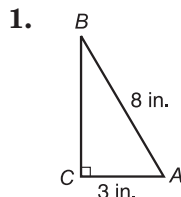
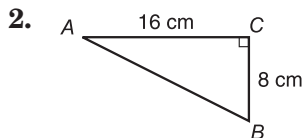# Trigonometric Ratios in Right Triangles

Find the values of the sine, cosine, and tangent for each $\angle B$.

1.

$\sin B = \frac{3}{8}; \cos B = \frac{\sqrt{55}}{8};$

$\tan B = \frac{3\sqrt{55}}{55}$

2.
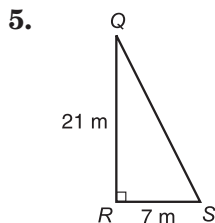

$\sin B = \frac{2\sqrt{5}}{5}; \cos B = \frac{\sqrt{5}}{5};$

$\tan B = 2$

3. If $\tan \theta = 5$, find $\cot \theta$.

$\frac{1}{5}$

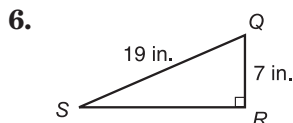**4.** If $\sin \theta = \frac{3}{8}$, find $\csc \theta$.

$\frac{8}{3}$

Find the values of the six trigonometric ratios for each $\angle S$.

5.

$\sin S = \frac{3\sqrt{10}}{10}; \cos S = \frac{\sqrt{10}}{10};$

$\tan S = 3; \csc S = \frac{\sqrt{10}}{3};$

$\sec S = \sqrt{10}; \cot S = \frac{1}{3}$

6.

$\sin S = \frac{7}{19}; \cos S = \frac{2\sqrt{78}}{19};$

$\tan S = \frac{7\sqrt{78}}{156}; \csc S = \frac{19}{7};$

$\sec S = \frac{19\sqrt{78}}{156}; \cot S = \frac{2\sqrt{78}}{7}$

7. *Physics* Suppose you are traveling in a car when a beam of light passes from the air to the windshield. The measure of the angle of incidence is 55°, and the measure of the angle of refraction is 35° 15′. Use Snell's Law, $\frac{\sin \theta_i}{\sin \theta_r} = n,$ to find the index of refraction n of the windshield to the nearest thousandth.
about 1.419

5-2

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Example

Find the are
1. $A(4, 6), B$
3. $A(4, 2), B$