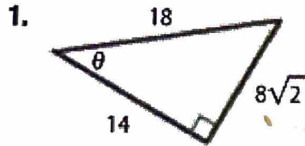


Accel Pre-Calculus  
1.02 Practice Right Triangle Trig Ratios

Date: \_\_\_\_\_

Find the exact values of the six trigonometric functions of  $\theta$ .

(Example 1)



$$\sin \theta = \frac{8\sqrt{2}}{18} = \frac{4\sqrt{2}}{9}$$

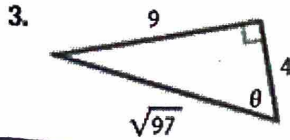
$$\csc \theta = \frac{9}{4\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{9\sqrt{2}}{8}$$

$$\cos \theta = \frac{7}{9}$$

$$\sec \theta = \frac{9}{7}$$

$$\tan \theta = \frac{8\sqrt{2}}{14} = \frac{4\sqrt{2}}{7}$$

$$\cot \theta = \frac{7}{4\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{7\sqrt{2}}{8}$$



$$\sin \theta = \frac{4}{9} = \frac{4\sqrt{97}}{9\sqrt{97}}$$

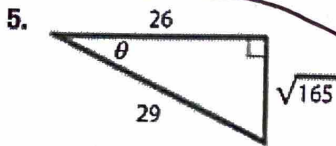
$$\csc \theta = \frac{\sqrt{97}}{4}$$

$$\cos \theta = \frac{\sqrt{97}}{9} = \frac{4\sqrt{97}}{4\sqrt{97}}$$

$$\sec \theta = \frac{9\sqrt{97}}{4}$$

$$\tan \theta = \frac{4}{\sqrt{97}}$$

$$\cot \theta = \frac{\sqrt{97}}{4}$$



5) 
$$\sin \theta = \frac{\sqrt{165}}{29}$$

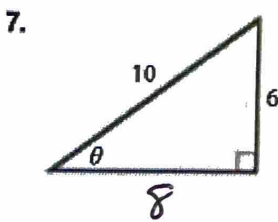
$$\csc \theta = \frac{29}{\sqrt{165}} = \frac{29\sqrt{165}}{165}$$

$$\cos \theta = \frac{26}{29}$$

$$\sec \theta = \frac{29}{26}$$

$$\tan \theta = \frac{\sqrt{165}}{26}$$

$$\cot \theta = \frac{26}{\sqrt{165}} = \frac{26\sqrt{165}}{165}$$

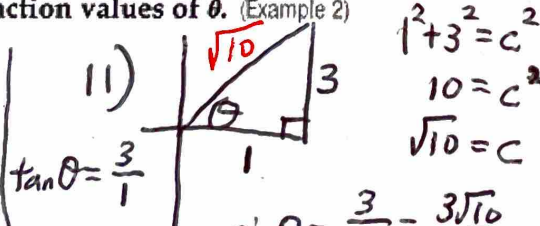


Use the given trigonometric function value of the acute angle  $\theta$  to find the exact values of the five remaining trigonometric function values of  $\theta$ . (Example 2)

9.  $\sin \theta = \frac{4}{5}$

11.  $\tan \theta = 3$

13.  $\cos \theta = \frac{5}{9}$



$$\tan \theta = \frac{3}{1}$$

$$\sin \theta = \frac{3}{\sqrt{10}} = \frac{3\sqrt{10}}{10}$$

$$\cos \theta = \frac{1}{\sqrt{10}} = \frac{\sqrt{10}}{10}$$

$$\tan \theta = \frac{3}{1}$$

$$\csc \theta = \frac{\sqrt{10}}{3}$$

$$\sec \theta = \sqrt{10}$$

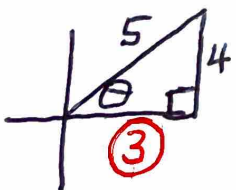
$$\cot \theta = \frac{1}{3}$$

7)  $\sin \theta = \frac{6}{10} = \frac{3}{5}$   $\csc \theta = \frac{5}{3}$

$$\cos \theta = \frac{4}{5}$$
  $\sec \theta = \frac{5}{4}$

$$\tan \theta = \frac{3}{4}$$
  $\cot \theta = \frac{4}{3}$

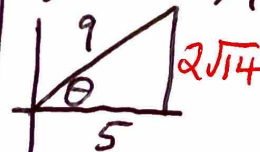
9)  $\sin \theta = \frac{4}{5}$   $\csc \theta = \frac{5}{4}$



$$\cos \theta = \frac{3}{5}$$
  $\sec \theta = \frac{5}{3}$

$$\tan \theta = \frac{4}{3}$$
  $\cot \theta = \frac{3}{4}$

13)  $\cos \theta = \frac{5}{9}$   $5^2 + x^2 = 9^2$   
 $x^2 = 56$   $x = 2\sqrt{14}$



$$\sin \theta = \frac{2\sqrt{14}}{9}$$
  $\csc \theta = \frac{9\sqrt{14}}{28}$

$$\cos \theta = \frac{5}{9}$$
  $\sec \theta = \frac{9}{5}$

$$\tan \theta = \frac{2\sqrt{14}}{5}$$
  $\cot \theta = \frac{5\sqrt{14}}{28}$