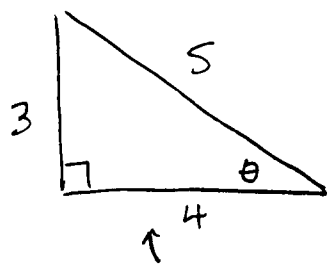
1)



$\sin\theta = \frac{3}{5}$ $\csc\theta = \frac{5}{3}$

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

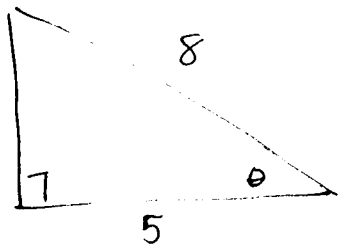
$\tan\theta = \frac{3}{4}$ $\cot\theta = \frac{4}{3}$

$x^2 + 3^2 = 5^2$

$x^2 = 25 - 9$

$x = 4$

2)



$\sin\theta = \frac{\sqrt{39}}{8}$ $\csc\theta = \frac{8\sqrt{39}}{39}$

$\cos\theta = \frac{5}{8}$ $\sec\theta = \frac{8}{5}$

$\tan\theta = \frac{\sqrt{39}}{5}$ $\cot\theta = \frac{5\sqrt{39}}{39}$

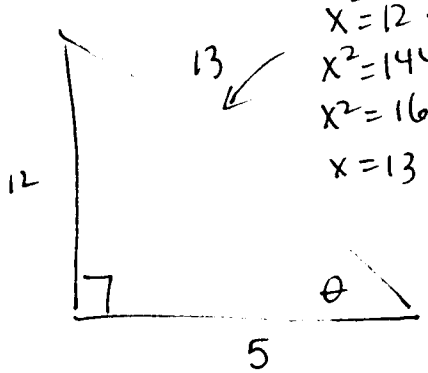
$x^2 + 5^2 = 8^2$

$x^2 + 25 = 64$

$x^2 = 39$

$x = \sqrt{39}$

3)



$x^2 = 12^2 + 5^2$

$x^2 = 144 + 25$

$x^2 = 169$

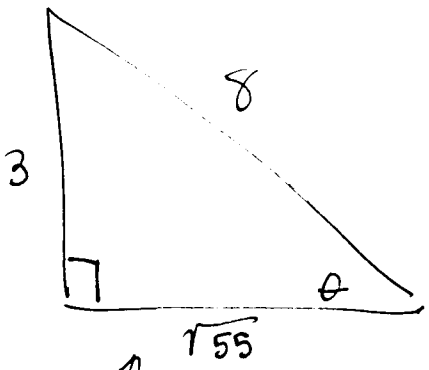
$x = 13$

$\sin\theta = \frac{12}{13}$ $\csc\theta = \frac{13}{12}$

$\cos\theta = \frac{5}{13}$ $\sec\theta = \frac{13}{5}$

$\tan\theta = \frac{12}{5}$ $\cot\theta = \frac{5}{12}$

4)



$\sin\theta = \frac{3}{8}$ $\csc\theta = \frac{8}{3}$

$\cos\theta = \frac{\sqrt{55}}{8}$ $\sec\theta = \frac{8\sqrt{55}}{55}$

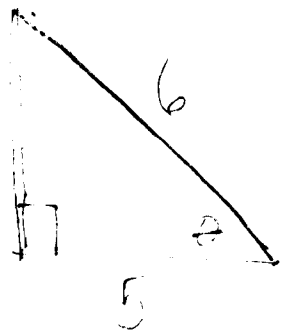
$\tan\theta = \frac{3\sqrt{55}}{55}$ $\cot\theta = \frac{\sqrt{55}}{3}$

$x^2 + 3^2 = 8^2$

$x^2 + 9 = 64$

$x = \sqrt{55}$

5)



$x^2+5^2=6^2$

$x^2+25=36$

$x^2=11$

$x=\sqrt{11}$

$\sin\theta = \frac{\sqrt{11}}{6}$ $\csc\theta = \frac{6\sqrt{11}}{11}$

$\cos\theta = \frac{5}{6}$ $\sec\theta = \frac{6}{5}$

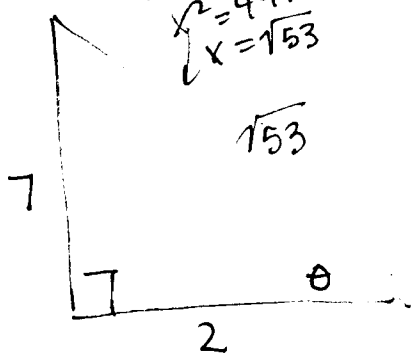
$\tan\theta = \frac{\sqrt{11}}{5}$ $\cot\theta = \frac{5\sqrt{11}}{11}$

6)

$x^2=7^2+2^2$

$x^2=49+4$

$x=\sqrt{53}$



$\sin\theta = \frac{7\sqrt{53}}{53}$ $\csc\theta = \frac{\sqrt{53}}{7}$

$\cos\theta = \frac{2\sqrt{53}}{53}$ $\sec\theta = \frac{\sqrt{53}}{2}$

$\tan\theta = \frac{7}{2}$ $\cot\theta = \frac{2}{7}$

Reciprocal Trigonometric Ratios

Determine all other trigonometric ratios given the following:

1) $\sin\theta = \frac{3}{5}$
2) $\cos\theta = \frac{5}{8}$
3) $\tan\theta = \frac{12}{5}$
4) $\csc\theta = \frac{8}{3}$
5) $\sec\theta = \frac{6}{5}$
6) $\cot\theta = \frac{2}{7}$

Angles Beyond 180°

1. Name 3 coterminal angles for each of the following:

1) 150° 510°, 870°, -210°
2) -310° 50°, 410°, -670°
3) 10° 370°, 730°, -350°
4) -245° 115°, 475°, -605°
5) 1865° 1505°, 1145°, 65°
6) -2055° -1695°, -1335°, -975°

2. Determine the principal angle for each of the following:

1) 550° 190°
2) -910° 170°
3) -10° 350°
4) 1245° 165°
5) -1560° 240°
6) 2850° 330°

3. State the exact trig ratio for the following:

a) $\sin 45° = \frac{\sqrt{2}}{2}$
b) $\tan 30° = \frac{\sqrt{3}}{3}$
c) $\cos 60° = \frac{1}{2}$
d) $\sin 225° = -\frac{\sqrt{2}}{2}$
e) $\tan 135° = -1$
f) $\cos 315° = \frac{\sqrt{2}}{2}$
g) $\csc 150° = 2$
h) $\cot -135° = 1$
i) $\sec -420° = 2$