Problem 1. Section 1.3 #116

Convert each angle in degrees to radians.

$\boxed{-\frac{5\pi}{4}}$

Problem 2. Section 1.3 #120

Convert each angle in radians to degrees

$\boxed{-90^\circ}$

Problem 3. Section 1.3 #124

Evaluate the following functional values

$\boxed{-1}$

Problem 4. Section 1.3 #134

Consider triangle ABC, a right triangle with a right angle at C ...

a. $\boxed{21}$

b. $\boxed{\sin\theta = 3/5}$, $\boxed{\cos\theta = 4/5}$, $\boxed{\tan\theta = 3/4}$, $\boxed{\cot\theta = 4/3}$, $\boxed{\csc\theta = 5/3}$, $\boxed{\sec\theta = 5/4}$

Problem 5. Section 1.3 #136

For the following exercises, P is a point on the unit circle ...

a. $\boxed{\frac{8}{17}}$

b. $\boxed{\sin\theta = \frac{8}{17}}$, $\boxed{\cos\theta = \frac{-15}{17}}$, $\boxed{\tan\theta = \frac{-8}{15}}$, $\boxed{\cot\theta \frac{15}{-8}}$, $\boxed{\csc\theta = \frac{17}{8}}$, $\boxed{\sec\theta = \frac{-17}{15}}$

Problem 6. Section 1.3 #140

Simplify each expression by writing it in terms of sins and cosines ...

$\boxed{1}$

Problem 7. Section 1.3 #152

Verify that each equation is an identity

$\tan^2\beta = \frac{\sin^2\beta}{\cos^2\beta}$ and $\sin^2\beta + \cos^2\beta = (\frac{y}{r})^2 + (\frac{x}{r})^2 = 1$

$$\begin{aligned}\sin^2\beta + \tan^2\beta + \cos^2\beta &= 1 + \tan^2\beta \\ &= 1 + \frac{\sin^2\beta}{\cos^2\beta} \\ &= \frac{\cos^2\beta + \sin^2\beta}{\cos^2\beta} \\ &= \frac{1}{\cos^2\beta} \\ &= \boxed{\sec^2\beta}\end{aligned}$$

Problem 8. Section 1.3 #162

Solve the trigonometric equations ...

$\boxed{\theta = \frac{-\pi}{2} + 2n\pi,\ n \in \mathbb{Z}}$