

Pre-Calculus B
Final Review Part 2

Name _____

1. Approximate the value of the expression to two decimal places. (7.1)

$$\cos^{-1}\left(\frac{-2}{5}\right)$$

2. Find the exact solution to the equation. (7.1)

$$3 \tan^{-1}(2x) = \pi$$

3. Find the exact solution to the equation. (7.1)

$$5 \sin^{-1}x - 4\pi = 3 \sin^{-1}x - 5\pi$$

4. Find the exact value of the expression. (7.2)

$$\sin\left[\cos^{-1}\left(\frac{-\sqrt{2}}{2}\right)\right]$$

5. Find the exact value of the expression. (7.2)

$$\csc\left[\tan^{-1}\left(\frac{\sqrt{3}}{3}\right)\right]$$

6. Find the exact value of the expression. (7.2)

$$\cot\left[\sin^{-1}\left(\frac{-8}{9}\right)\right]$$

7. Find the exact value of the expression.
(7.2)

$$\sin^{-1} \left[\cos \left(\frac{5\pi}{3} \right) \right]$$

10. Solve the equation on the interval
 $0 \leq \theta \leq 2\pi$. (7.3)

$$4 \cos^2 \theta - 3 = 0$$

8. Find the exact value of the expression.
(7.2)

$$\sec^{-1} (-1)$$

11. Solve the equation on the interval
 $0 \leq \theta \leq 2\pi$. (7.3)

$$5\sqrt{2} \sin \theta + 4 = -1$$

9. Approximate the value of the
expression to two decimal places. (7.2)

$$\sec^{-1} \left(\frac{7}{3} \right)$$

12. Solve the equation on the interval
 $0 \leq \theta \leq 2\pi$. Round to three decimal
places. (7.3)

$$2 \cot \theta = -7$$

13. Solve the equation on the interval $0 \leq \theta \leq 2\pi$. (7.3)

$$2 \sin^2 \theta - 3 \sin \theta - 2 = 0$$

14. Solve the equation on the interval $0 \leq \theta \leq 2\pi$. (7.3)

$$\cos^2 \theta = 3(1 - \sin \theta)$$

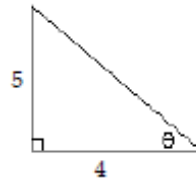
15. Solve the equation on the interval $0 \leq \theta \leq 2\pi$. (7.3)

$$\sin^2 \theta - \cos^2 \theta + \cos \theta = 0$$

16. Solve the equation on the interval $0 \leq \theta \leq 2\pi$. (7.3)

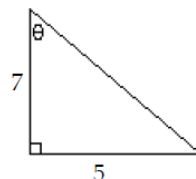
$$\csc \theta = \sin \theta$$

17. Find the value of the indicated trigonometric function of the angle θ in the figure. Given an exact answer with a rational denominator. (8.1)



Find $\cos \theta$.

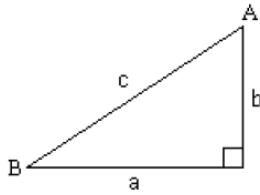
18. Find the value of the indicated trigonometric function of the angle θ in the figure. Give an exact answer with a rational denominator. (8.1)



Find $\csc \theta$.

19. Solve the right triangle using the information given. Round answers to two decimal places if necessary. (8.1)

$$b = 4, m \angle A = 40^\circ$$



20. A straight trail with a uniform inclination of 14° leads from a lodge at an elevation of 800 feet to a mountain lake at an elevation of 4800 feet. What is the length of the trail (to the nearest foot)? (8.1)

21. A twenty-four foot ladder just reaches the top of a house and forms an angle of 62.5° with a wall of the house. How tall is the house to the nearest tenth? (8.1)

22. Solve the triangle. Round answers to three decimal places if necessary. (8.2)

$$m \angle B = 10^\circ, m \angle C = 50^\circ, a = 5$$

23. Two sides and an angle are given. Determine whether the given information results in one triangle, two triangles, or no triangle at all. Solve any triangles that result. Round to three decimal places if necessary. (8.2)

$$a = 5, b = 4, m \angle B = 15^\circ$$

24. An airplane is sighted at the same time by two observers who are 3.4 miles apart and both directly west of the airplane. They report the angles of elevation as 15° and 27° . How high is the airplane? Round to three decimal places if necessary. (8.2)

25. Solve the triangle. Round to three decimal places if necessary. (8.3)

$$a = 6, b = 8, m \angle C = 70^\circ$$

26. Solve the triangle. Round to three decimal places if necessary. (8.3)

$$a = 6, b = 14, c = 16$$

27. Find the area of the triangle. Round to three decimal places if necessary. (8.4)

$$b = 9, c = 6, m \angle A = 83^\circ$$

28. Find the area of the triangle. Round to three decimal places if necessary. (8.4)

$$a = 11, b = 7, c = 8$$

29. Find the area of a segment of a circle of radius 23 cm, formed by a central angle of 105° . Round your answer to the nearest square cm. (8.4)

30. A room in the shape of a triangle has sides of length 7 yd, 9 yd, and 14 yd. If carpeting costs \$12.25 a square yard and padding costs \$3.50 a square yard, how much to the nearest dollar will it cost to carpet the room, assuming there is no waste? (8.4)