Name _____ Period _____

Regular Pre-Calculus — Ms. Montgomery
Spring Semester — Extra Trigonometry Review

Write ***exact*** answers in simplest radical form. Use the space below to do work if necessary.

1. $\cos\left(\frac{5\pi}{3}\right)$ = _____

2. $\csc\left(-\frac{3\pi}{4}\right)$ = _____

3. $\tan\left(\frac{\pi}{2}\right)$ = _____

4. $\sin\left(\frac{11\pi}{6}\right)$ = _____

5. $\cot\left(-\frac{\pi}{4}\right)$ = _____

6. $\sec\left(\frac{3\pi}{2}\right)$ = _____

7. $\sin(-\pi)$ = _____

8. $\tan\left(-\frac{7\pi}{6}\right)$ = _____

9. $\sec(\pi)$ = _____

10. $\sin\left(-\frac{2\pi}{3}\right)$ = _____

11. $\tan\left(\frac{7\pi}{3}\right)$ = _____

12. $\cot\left(\frac{5\pi}{2}\right)$ = _____

13. $\csc\left(\frac{2\pi}{3}\right)$ = _____

14. $\sec\left(\frac{7\pi}{4}\right)$ = _____

15. $\cot\left(-\frac{\pi}{6}\right)$ = _____

16. $\cos\left(\frac{3\pi}{4}\right)$ = _____

17. $\csc\left(-\frac{11\pi}{6}\right)$ = _____

18. $\sec\left(\frac{7\pi}{6}\right)$ = _____

19. $\csc(4\pi)$ = _____

20. $\cos(0)$ = _____

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| | |
|---|---|
| 1. Find the reference angle for $\frac{15\pi}{29}$ . | |
| 2. Find the reference angle for 281°. | |
| 3. Find the value of the six trigonometric functions of an angle in standard position if the point with coordinates (12, -16) lies on its terminal side. | |
| 4. Suppose $\sec\theta = \sqrt{6}$ and the terminal side of the angle lies in Quadrant IV. Find the value of the other five trigonometric functions of the angle $\theta$ in standard position. | |
| 5. Find one positive and one negative angle that are co-terminal with an angle measure – 507°. | |
| 6. Find one positive and one negative angle that are co-terminal with an angle measure $-\frac{29\pi}{23}$. | |
| 7. Write the ordered pair associated with the given unit circle radian measure<br>A. $\frac{19\pi}{6}$ B. $-\frac{37\pi}{4}$ | A.<br>B. |

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| **Evaluate each of the following functions.** | |
|---|---|
| 1. $\cos^{-1} 0$ | |
| 2. $\arcsin \frac{\sqrt{3}}{2}$ | |
| 3. $\tan^{-1} \frac{\sqrt{3}}{3}$ | |
| 4. $\cot\left( \cos^{-1}\left( -\frac{\sqrt{3}}{2} \right) \right)$ | |
| 5. $\sec\left( \sin^{-1}\left( -\frac{1}{2} \right) \right)$ | |
| 6. $\cos^{-1}\left( \csc\left( -\frac{\pi}{2} \right) \right)$ | |
| 7. $\sec\left( \tan^{-1}(-1) \right)$ | |
| 8. $\cot\left( \operatorname{arccsc} \frac{75}{21} \right)$ | |
| 9. $\sin^{-1}\left( \cos \frac{5\pi}{4} \right)$ | |
| 10. $\csc\left( \sin^{-1}(-1) + \tan^{-1}\left( -\sqrt{3} \right) \right)$ | |

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Use the Law of Sines or the Law of Cosines or right triangle trigonometry to solve the following.
Round your answers to the nearest tenth.

1. Solve the triangle where a = 14, $m\angle A = 25^\circ$, $m\angle B = 75^\circ$.

2. Solve the triangle where c = 15, b = 30 and $m\angle A = 140^\circ$.

3. Solve the triangle where a = 4, b = 3, $m\angle A = 40^\circ$.

4. Solve the triangle where a = 6, b = 7 and $m\angle C = 20^\circ$.

5. Two angles of a triangle measure 32º and 53º. The longest side is 55 cm. Find the length of the shortest side.

6. A triangular-shaped lot of land has sides of length 120 m, 50 m and 150 m. What are the measures of the angles?

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7. A parallelogram has sides of 6 cm and 8 cm and a 65º angle. Find the lengths of the diagonals.

8. How long is the base of an isosceles triangle if each leg is 27 cm and each base angle measures 23º?

9. A loading ramp 5 m long makes a 25º angle with the level ground. The ramp is replaced by another ramp 15 m long. Find the angle that the new ramp makes with the ground.

10. A baseball diamond is a square 90 feet on a side. The pitcher's mound is 60.5 feet from home plate. How far is it from the mound to first base?

11. Find the area of the triangle if a = 6, b = 4 and c = 5. (Don't use Hero's Formula.)

12. Find the area of the triangle given b = 10.9, $m\angle A = 46.35º$, and $m\angle B = 62.63º$.