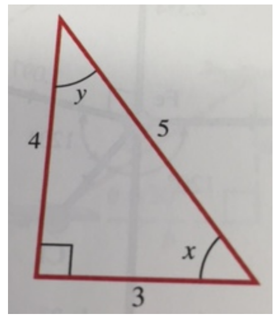
Name________________________________ **Pre-Calculus**

Date__________________ **4.3 and 4.4 Right Tri Trig and Any Angle Trig**

Period_____________ **CTM, Does this Make Sense, and True/False**

In ***every*** exercise below a mistake was made. Please find the mistake, and explain how to solve it correctly.



1. For the given triangle, calculate the $\sin y$.

Incorrect Solution:

Formulate sine in terms of trig ratios $\quad \sin y = \dfrac{opposite}{hypotenuse}$

The opposite side is 4, and the hypotenuse is 5. $\quad \sin y = \dfrac{4}{5}$

Correct Solution:

2. Using the same triangle pictured in problem **1**. calculate $\tan x$

Incorrect Solution:

Formulate tangent in terms of trig ratios. $\quad \tan x = \dfrac{adjacent}{opposite}$

The adjacent side is 3, and the opposite side is 4. $\quad \tan x = \dfrac{3}{4}$

Correct Solution:

3. Using the same triangle pictured in problem **1**. calculate $\sec x$.

Incorrect Solution:

Formulate sine in terms of trig ratios. $\quad \sin x = \dfrac{opposite}{hypotenuse}$

The opposite side is 4, and the hypotenuse is 5. $\quad \sin x = \dfrac{4}{5}$

Write secant as the reciprocal of sine. $\quad \sec x = \dfrac{1}{\sin x}$

Simplify. $\quad \sec x = \dfrac{1}{4/5} = \dfrac{5}{4}$

Correct Solution:

4. Using the same triangle pictured in problem **1**. calculate $\csc y$.

Incorrect Solution:

Correct Solution:

Formulate cosine in terms of trig ratios.	$\cos x = \dfrac{adjacent}{hypotenuse}$
The adjacent side is 4, and the hypotenuse is 5.	$\cos y = \dfrac{4}{5}$
Write cosecant as the reciprocal of cosine.	$\csc y = \dfrac{1}{\cos y}$
Simplify.	$\csc y = \dfrac{1}{4/5} = \dfrac{5}{4}$

In ***every*** exercises below, determine whether each statement makes sense or does not make sense. Explain why you think this way.

5. For a given angle θ, I found a slight increase in $\sin\theta$ .as the size of the triangle increased.

6. Although I can use an isosceles right triangle to determine the exact value of $\sin\dfrac{\pi}{4}$, I can also use my calculator to obtain this value.

7. The sine and cosine are cofunctions and reciprocals of each other.

8. I'm working with a quadrantal angle θ for which $\sin\theta$ is undefined.

9. This angle θ is in a quadrant in which $\sin\theta < 0$ and $\csc\theta > 0$.

10. I am given that $\tan\theta = \dfrac{3}{5}$, so I can conclude $y = 3$ and $x = 5$.

11. When I found the exact value of $\cos\dfrac{14\pi}{3}$, I used a number of concepts, including coterminal angles, reference angles, finding the cosine of special angles, and knowing the cosine's sign in various quadrants.

12. It is possible for all six trigonometric functions of the same angle to have positive values.

13. It is possible for all six trigonometric functions of the same angle to have negative values.

14. The trigonometric function value for any angle with negative measure must be negative.

15. The trigonometric function value for any angle with positive measure must be positive.

Determine whether each statement below is ***TRUE*** or ***FALSE***. *If the statement is false, make the necessary changes to produce a **TRUE** statement.*

16. If you are given the measures of two sides of a right triangle, you can solve the right triangle.

17. If you are given the measures of one side and one acute angle of a right triangle, you cannot solve the right triangle.

18. If you are given the two acute angles of a right triangle, you can solve the right triangle.

19. If you are given the hypotenuse of a right triangle and the angle opposite the hypotenuse, you can solve the right triangle.

20. . $\sec^2\theta - 1$ can be negative for some value of θ.

21. $(\sec\theta)(\csc\theta)$ is negative only when the terminal side of θ lies in quadrant II or IV.

22. $\cos\left(\frac{7\pi}{4}\right) = \cos\left(-\frac{7\pi}{4}\right)$

23. $\sin\left(-\frac{\pi}{3}\right) = \sin\frac{\pi}{3}$

24. The angle θ lies in Quadrant II when, $\cos\theta < 0$ and $\csc\theta > 0$.

25. The angle θ lies in Quadrant III when, $\sec\theta < 0$ and $\csc\theta > 0$.