Name:_____ Date:_____

Math 10/11 Honors HW Section 4.1 Review on Basic Trigonometry:

1. When I use regular trigonometric functions like sine, cosine, and tangent, does it only work for right triangles? Or can I use it for all different types of triangles?

2. When I sine an angle like 60°, it gives me a value like 0.866025403. What does this number represent?

3. There are 2 similar right triangles where one is three times bigger than the other. They are both $45^\circ - 45^\circ - 90^\circ$ triangles. If I cosine the 45° in the smaller triangle, will it give me the same value when I cosine the 45° of the bigger triangle? Why or why not?

4. When I cosine or sine any angle in a right triangle (except the 90°) will I ever get a value greater than 1? Why or why not?

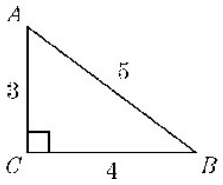
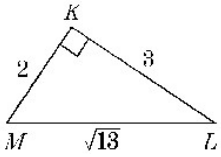
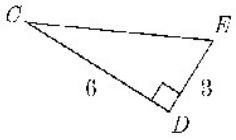
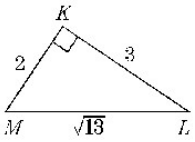
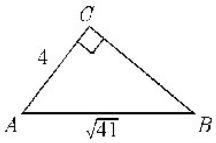
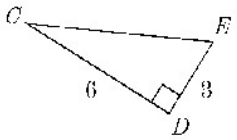
5. When I use tangent on any angle in a right triangle (except the 90°) will I ever get a value greater than 1? Why or why not?

6. What does the inverse trigonometric function do? Ie: $\sin^{-1}, \cos^{-1}$, or $\tan^{-1}$. What is the purpose of these inverse functions?

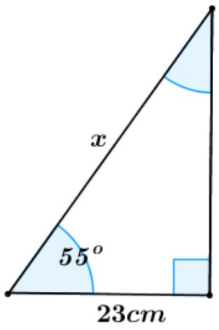
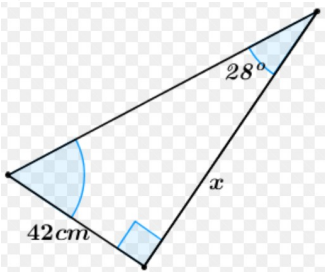
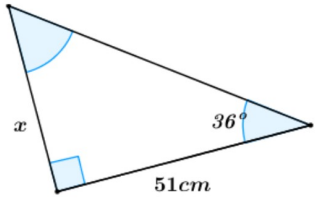
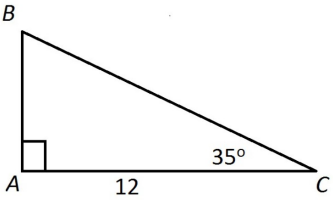
7. What does SOHCAHTOA stand for?

8. When I take sine 45 and divide it by cosine 45, does it equal to tangent 45? Why is it equal? Does sine an angle divided by cosine an angle always to tangent the angle? Why or why not?

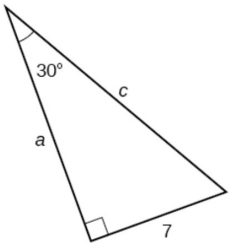
9. Find the ratios of the following functions and then solve for the angle:

a) $\sin A =$ $\cos B =$ 	*b*) $\cos M =$ $\tan L =$ 
c) $\tan E =$ $\sin C =$ 	*d*) $\sin L =$ $\cos M =$ 
e) $\tan A =$ $\cos B =$ 	*f*) $\cos C =$ $\sin C =$ 

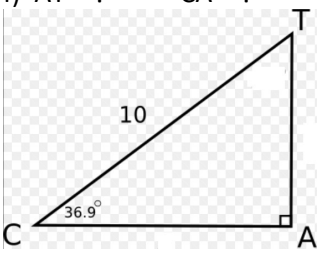
10. Find the length of the missing sides for each of the following triangles:

a) x = ? 	b) x = ? 
c) x = ? 	d) AB = ? BC = ? 

e) a = ? c = ?

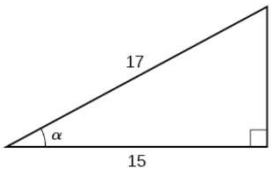


f) AT = ? CA = ?

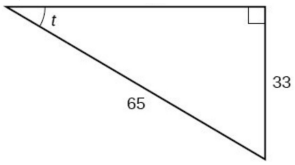


11. Find the degree of the missing angle accurate to 3 decimal places:

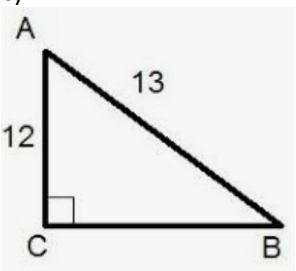
a) $\alpha = ?$



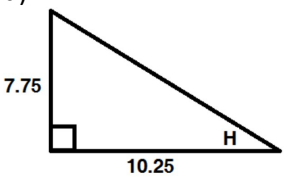
b) $t = ?$



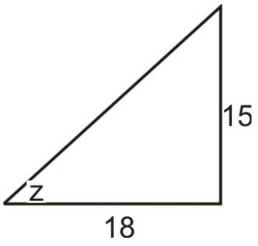
c) $\angle B = ?$ $\angle A = ?$



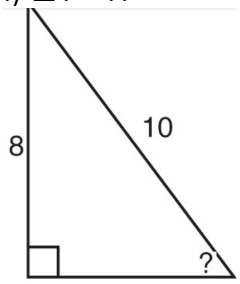
d) $\angle H = ?$



e) $\angle z = ?$



f) $\angle ? = ??$



12. In a right triangle, you are told that $\sin\theta = \frac{7}{15}$. What is the value of $\cos\theta$ and $\tan\theta$?

13. If $\sin 43° = \frac{a}{b}$, then what are the values of $\cos 47°$ and $\sin 47°$ in terms of "a" and "b"?

14. Given that $0° < \alpha < 90°$, if $\tan\alpha = \frac{\sqrt{12}}{7}$ then what are the exact values of $\sin\alpha$ and $\cos\alpha$?

15. Indicate if the following work shown below is correct? If there is a mistake, please indicate it:

a)
$step1 := \frac{\sin 12°}{6}$
$step2 := \sin 2^{\circ}$
$step3 := 0.909297$

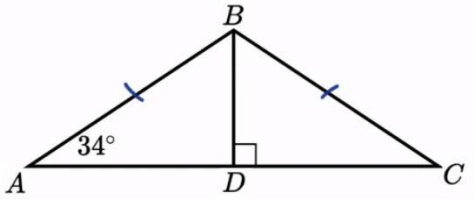
b)
$s1 := \cos 20° \times \sin 40°$
$s2 := 0.9 \times 0.64$
$s3 := 0.576$

c)
$s1: \cos\frac{3}{4} = \theta$
$s2: 0.9999 = \theta$

d)
$s1: \tan(50°) = a$
$s2: -0.2719006 = a$

e)
$s1: \sin(50 + \theta) = \sin 40° + 0.8$
$s2: 50° + \theta = 40° + 0.8$
$s3: \theta = -9.2°$

16. What is the value of $\sin\angle CBD - \cos\angle BAC$?



17. In the diagram, point "G" is on the line segment HI, point "T" lies on the line segment RH. $\angle RIG$ and $\angle HTG$ are both $90°$. RI=18, HI = 24 and the lengths of RT, HT, and GT are integers. Find the sum of all possible distinct area of quadrilateral IGTR.