

Name: _____

Date: _____

Ch6 Review Basic Trigonometry Concepts and Questions:

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. Draw each of the angles in standard position

a) 150°	b) 220°	c) 170°
d) 340°	e) -50°	f) -270°

10. Find the reference angle for each of the following angles in standard position:

a) 190°	b) 334°	c) 214°
d) 287°	e) -140°	f) -2000°

11. Indicate whether if each of the following functions will be either positive or negative

a) $\sin 150^\circ$	b) $\cos 220^\circ$	c) $\tan 170^\circ$
d) $\sin 340^\circ$	e) $\cos(-50^\circ)$	f) $\sin(-270^\circ)$
g) $\tan(-100^\circ)$	h) $\sin 360^\circ$	i) $\cos(-180^\circ)$

12. Solve for θ between $0 \leq \theta \leq 360^\circ$

a) $\sin \theta = -\frac{1}{2}$	b) $\cos \theta = \frac{\sqrt{3}}{2}$	c) $2 \tan \theta + \sqrt{3} = 0$
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d) $2\sin\theta - \sqrt{2} = 0$	e) $\cos^2\theta = \frac{1}{2}$	f) $\tan\theta + \sqrt{3} = 0$
g) $\tan^2\theta - 1 = 0$	h) $2\sin^2\theta - 1 = 0$	i) $\tan^2\theta = \frac{1}{3}$

13. If $\sin\theta > 0$ and $\cos\theta > 0$, then which quadrant is θ in?

14. If $\sin\theta < 0$ and $\cos\theta > 0$, then which quadrant is θ in?

15. If $\tan\theta > 0$ and $\cos\theta < 0$, then which quadrant is θ in?

16. If $\sin\theta = \frac{3}{5}$, then what is the value(s) of $\cos\theta$ and $\tan\theta$?

17. If $\cos\theta = \frac{\sqrt{3}}{7}$, then what is the value of $\sin\theta$ and $\tan\theta$?

18. If $\tan \theta = \frac{-\sqrt{2}}{3}$, then what is the value of $\sin \theta$ and θ ?

19. If point "P" is on a unit circle and at the end of the terminal arm, then what are the "EXACT" coordinates of "P" if the angle at standard position is 135° ?

20. If point "P" is on a unit circle and at the end of the terminal arm, then what are the "EXACT" coordinates of "P" if $\cos \theta = \frac{\sqrt{7}}{5}$?

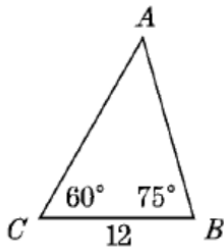
21. If point "P" is on a unit circle and at the end of the terminal arm, then what are the "EXACT" coordinates of "P" if $\sin \theta = \frac{-\sqrt{8}}{3}$?

22. The vertices of an equilateral triangle are on the circumference of a circle with a radius of 2. What is the area of the triangle?

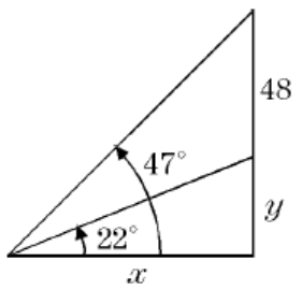
23. For how many integers “k” with $0 < k < 18$ is the equation true? $\frac{5 \sin(10k^\circ) - 2}{\sin^2(10k^\circ)} \geq 2$ [Euclid 2018]

24. Suppose $0^\circ < \theta < 360^\circ$, determine all angles θ such that $2 \sin^2 \theta + \cos^2 \theta = \frac{3}{2}$

25. What is the exact area of this triangle?



26. What are the values of “x” and “y”



27. If two sides of a triangle are 10cm and 12cm, and one of the angles is 30° , then what are the possible areas of this triangle?

28. An octagon has all its vertices on the circumference of a circle. If the area of the circle is $2000\pi \text{ units}^2$, then what is the perimeter and area of the octagon?

29. Solve for θ , where $0^\circ \leq \theta \leq 360^\circ$: $\cos^3 \theta + 3\cos^2 \theta + 3\cos \theta = \frac{19}{8}$

30. if $\cos \theta = \tan \theta$, determine all possible values of $\sin \theta$, giving your answer(s) as simplified exact numbers :
[Euclid 2017]

31. What is the value of x^2 in the diagram?

