

Name: _____

Period: _____

SM2H 8.3 Trigonometry on the Cartesian Plane

Draw a picture of the triangle, then solve.

1. $a = 3, b = 3, A = 45^\circ$

2. $c = 11, A = 60^\circ, C = 90^\circ$

$m\angle A =$

$a =$

$m\angle A =$

$a =$

$m\angle B =$

$b =$

$m\angle B =$

$b =$

$m\angle C =$

$c =$

$m\angle C =$

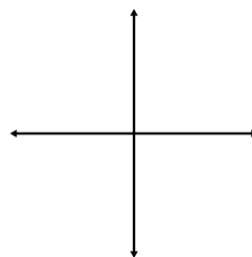
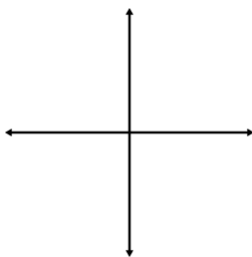
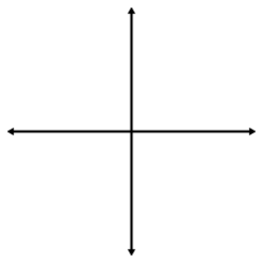
$c =$

Draw the angle measure in standard position. Identify the reference angle and its measurement.

3. 45°

4. 67°

5. 140°



angle measure _____

reference angle _____

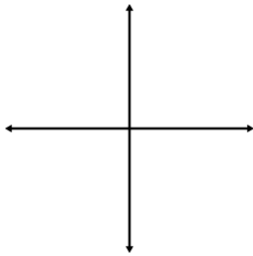
angle measure _____

reference angle _____

angle measure _____

reference angle _____

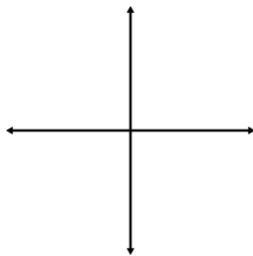
6. 210°



angle measure _____

reference angle _____

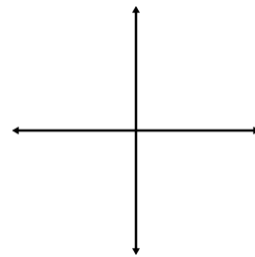
7. 257°



angle measure _____

reference angle _____

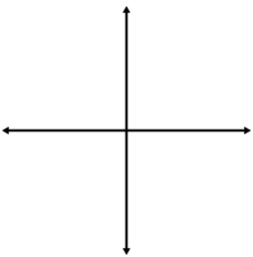
8. 305°



angle measure _____

reference angle _____

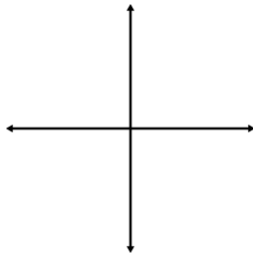
9. 110°



angle measure _____

reference angle _____

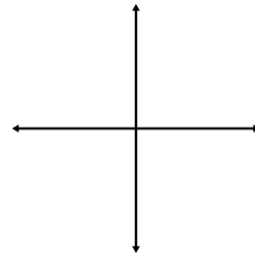
10. 270°



angle measure _____

reference angle _____

11. 335°

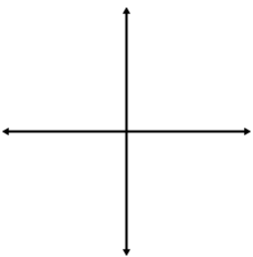


angle measure _____

reference angle _____

Find the sine, cosine, and tangent of the angle made by the following points. Keep answers in simplified radical form. (NO DECIMALS)

13. (1,4)

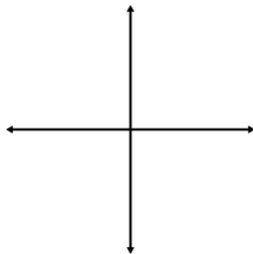


$\sin \theta =$

$\cos \theta =$

$\tan \theta =$

14. (3,-3)

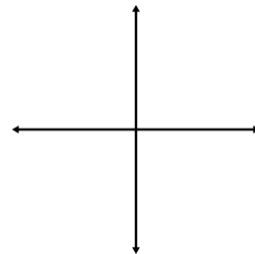


$\sin \theta =$

$\cos \theta =$

$\tan \theta =$

15. (-2,-4)

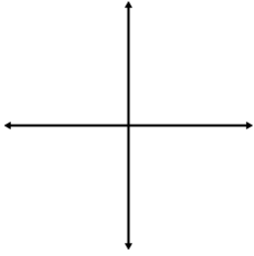


$\sin \theta =$

$\cos \theta =$

$\tan \theta =$

16. $(5, -3)$

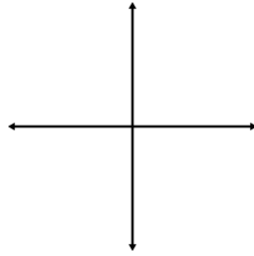


$\sin \theta =$

$\cos \theta =$

$\tan \theta =$

17. $(7, 2)$

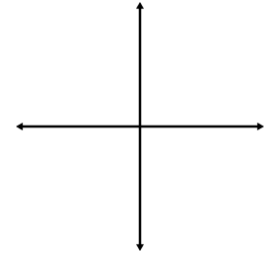


$\sin \theta =$

$\cos \theta =$

$\tan \theta =$

18. $(-5, 12)$

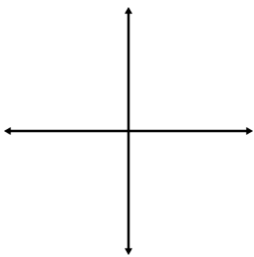


$\sin \theta =$

$\cos \theta =$

$\tan \theta =$

19. $(-4, -4)$

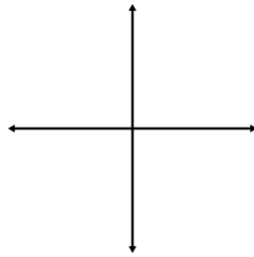


$\sin \theta =$

$\cos \theta =$

$\tan \theta =$

20. $(-1, 9)$

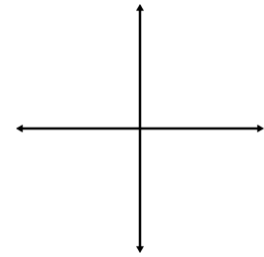


$\sin \theta =$

$\cos \theta =$

$\tan \theta =$

21. $(1, 2)$



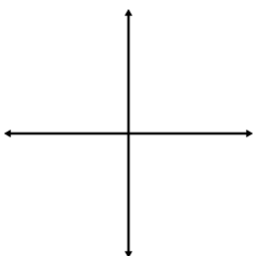
$\sin \theta =$

$\cos \theta =$

$\tan \theta =$

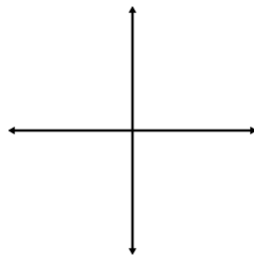
Find the measurement of the STANDARD ANGLE (you will need to first find the reference angle!) that is created by the coordinate point. Draw a picture. Round to the ten-thousandths place.

22. $(1, 4)$



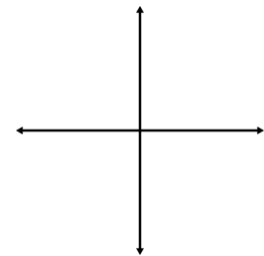
$\theta =$

23. $(3, -3)$



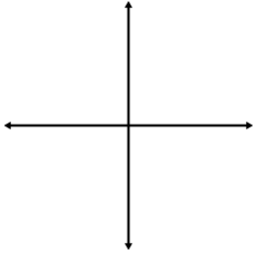
$\theta =$

24. $(-2, -4)$



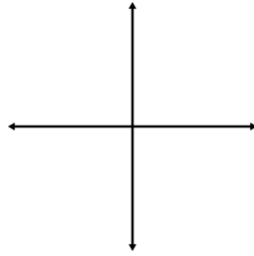
$\theta =$

25. $(5, -3)$



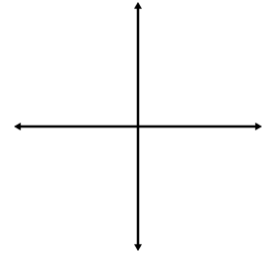
$\theta =$

26. $(7, 2)$



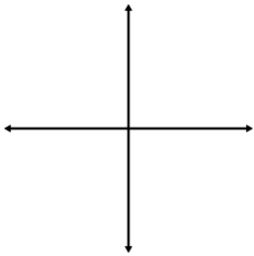
$\theta =$

27. $(-5, 12)$



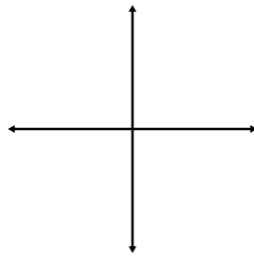
$\theta =$

28. $(-4, -4)$



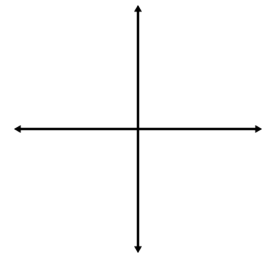
$\theta =$

29. $(-1, 9)$



$\theta =$

30. $(1, 2)$



$\theta =$

For each story problem, DRAW a picture, then answer the questions.

31. A ship captain wanted to sail out to his favorite island. He knew that he could travel exactly east from the dock for 10 miles, then turn left 90 exactly degrees and go north 3 miles to get to his favorite island. He knew there was a shorter way, though.

- Draw a picture of this scenario (with the dock at the origin).
- How many degrees left (from east) could he turn at the dock in order to travel straight to his favorite island?
- How many miles will he travel using this shortcut?