Precalculus
Name_____ ID: 1

Day 5 Trig. given an angle and inverse
Date_____ Period____

Use the given point on the terminal side of angle θ to find the value of all 6 trigonometric functions (ignore the trig. function stated).

1) $\cot \theta; (-17, 5)$

2) $\csc \theta; \left(\sqrt{17}, -8\right)$

3) $\cot \theta; \left(8, \sqrt{17}\right)$

4) $\cot \theta; (-4, -3)$

5) $\cos \theta; \left(-\sqrt{19}, -9\right)$

6) $\sec \theta; (8, -15)$

7) $\cot \theta; \left(-8, -\sqrt{17}\right)$

8) $\cot \theta; (-6, 8)$

9) $\cot \theta; (-18, -19)$

10) $\sin \theta; \left(2\sqrt{3}, -2\right)$

11) $\cos \theta; (7, 14)$

12) $\cot \theta; \left(-4, 2\sqrt{5}\right)$

13) $\csc \theta; \left(4, -2\sqrt{5}\right)$

14) $\cos \theta; \left(\sqrt{13}, -6\right)$

15) $\tan \theta; (-11, 5)$

16) $\csc \theta; (-20, -10)$

17) $\csc \theta; (4, -3)$

18) $\sin \theta; (-3, -4)$

19) $\sec\theta$; $(15, 15)$

20) $\csc\theta$; $(5, -\sqrt{11})$

Find the exact values of the five trigonometric ratios not given.

21) $\sin\theta = \dfrac{20}{29}$ and $\cos\theta < 0$

22) $\tan\theta = \dfrac{3}{4}$ and $\sin\theta > 0$

23) $\csc\theta = \dfrac{\sqrt{6}}{2}$ and $\cos\theta > 0$

24) $\csc\theta = \dfrac{5}{4}$ and $\cos\theta < 0$

25) $\cos\theta = -\dfrac{4}{5}$ and $\sin\theta > 0$

26) $\sin\theta = \dfrac{3}{5}$ and $\cos\theta < 0$

27) $\sin\theta = -\dfrac{8}{17}$ and $\cos\theta < 0$

28) $\sec\theta = \dfrac{17}{15}$ and $\sin\theta < 0$

29) $\sin\theta = -\dfrac{2\sqrt{10}}{7}$ and $\cos\theta > 0$

30) $\cos\theta = \dfrac{4}{5}$ and $\sin\theta < 0$

31) $\cos\theta = -\dfrac{12}{13}$ and $\sin\theta < 0$

32) $\sec\theta = -\dfrac{5}{4}$ and $\sin\theta > 0$

33) $\sin\theta = \dfrac{\sqrt{2}}{2}$ and $\cos\theta < 0$

34) $\cos\theta = -\dfrac{15}{17}$ and $\sin\theta < 0$

35) $\sec \theta = \dfrac{5}{4}$ and $\sin \theta > 0$

36) $\cot \theta = -\dfrac{1}{2}$ and $\sin \theta < 0$

37) $\sec \theta = \sqrt{2}$ and $\sin \theta > 0$

38) $\sin \theta = \dfrac{\sqrt{3}}{2}$ and $\cos \theta < 0$

40) $\cot \theta = -3$ and $\sin \theta < 0$

39) $\sec \theta = \dfrac{\sqrt{13}}{3}$ and $\sin \theta < 0$

Find the exact value of each expression using the unit circle for problems 41-58 over the interval 0 to 360 degress.

41) $\tan^{-1} 0$

42) $\cot^{-1} \dfrac{\sqrt{3}}{3}$

43) $\cos^{-1} 1$

44) $\sin^{-1} -\dfrac{\sqrt{2}}{2}$

45) $\sin^{-1} \dfrac{\sqrt{2}}{2}$

46) $\csc^{-1} \dfrac{2\sqrt{3}}{3}$

48) $\csc^{-1} 2$

47) $\cos^{-1} \dfrac{\sqrt{2}}{2}$

49) $\sec^{-1} \dfrac{2\sqrt{3}}{3}$

50) $\csc^{-1} -2$

51) $\sec \sin^{-1} \dfrac{\sqrt{65}}{9}$

52) $\sec \tan^{-1} \left(2\sqrt{2}\right)$

53) $\sec \tan^{-1} \dfrac{\sqrt{3}}{3}$

54) $\tan^{-1} \left(\cot \dfrac{2\pi}{3}\right)$

55) $\cos^{-1} \left(\csc -\dfrac{\pi}{2}\right)$

56) $\sin^{-1} \left(\tan 0\right)$

57) $\cos^{-1} \left(\sin \dfrac{\pi}{3}\right)$

58) $\sin^{-1} \left(\cot \dfrac{\pi}{2}\right)$

59) $\sec \cos^{-1} \dfrac{\sqrt{5}}{10}$

60) $\sin \cos^{-1} \dfrac{4\sqrt{17}}{17}$

Write each trigonometric expression as an algebraic expression.

61) $\sec \sin^{-1} x$

62) $\sec \tan^{-1} x$

63) $\csc \tan^{-1} x$

64) $\cot \tan^{-1} x$