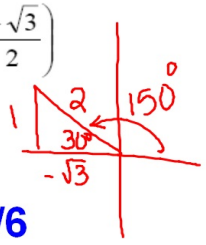
13-4 Inverse Functions
and Review

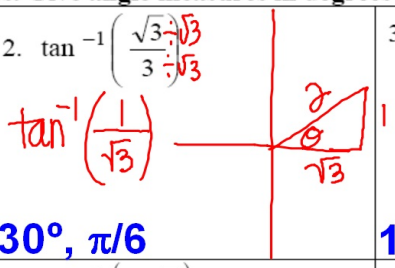
Find exact values. Draw triangles. Give angle measures in degrees and radians.

1. $\cos^{-1}\left(\frac{-\sqrt{3}}{2}\right)$



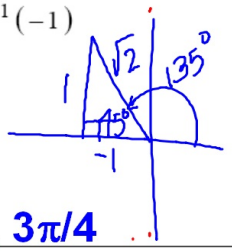
150°, 5π/6

2. $\tan^{-1}\left(\frac{\sqrt{3}}{3}\right)$



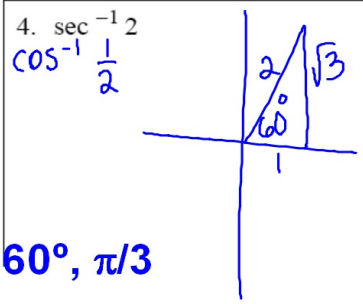
30°, π/6

3. $\cot^{-1}(-1)$



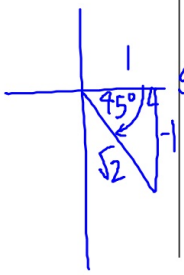
135°, 3π/4

4. $\sec^{-1} 2$



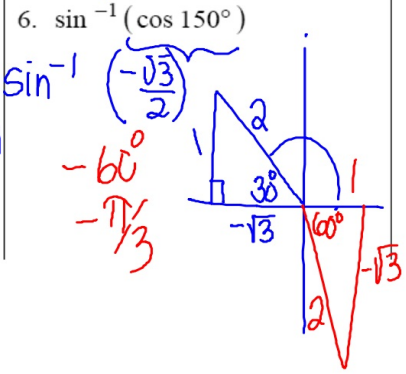
60°, π/3

5. $\csc^{-1}(-\sqrt{2})$

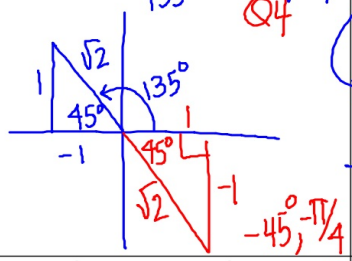


-45°, -π/4

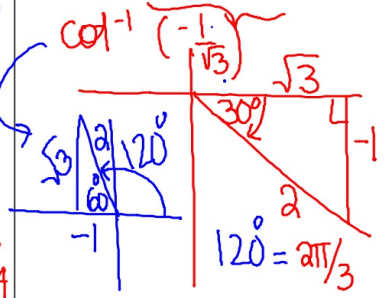
6. $\sin^{-1}(\cos 150°)$



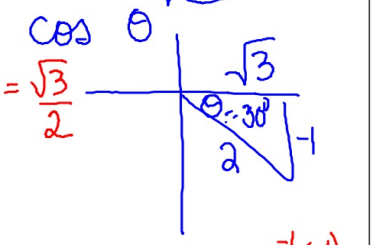
7. $\tan^{-1}\left(\cot\frac{3\pi}{4}\right)$



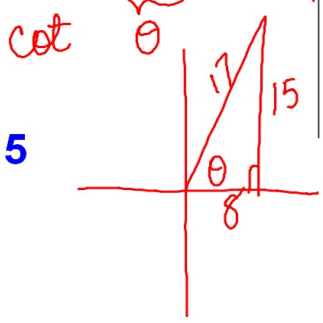
8. $\cot^{-1}(\tan(-30°))$



9. $\cos\left(\sin^{-1}\left(\frac{-1}{2}\right)\right)$



10. $\cot\left(\cos^{-1}\left(\frac{8}{17}\right)\right)$



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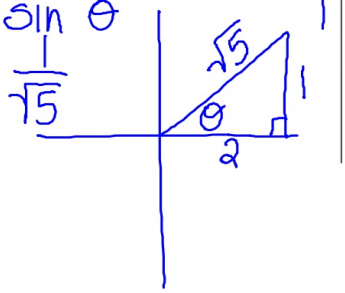
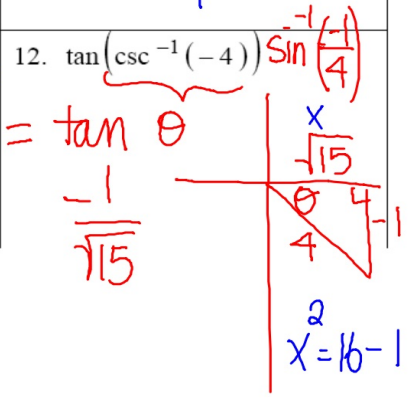
11. $\sin\left(\cot^{-1} 2\right)$



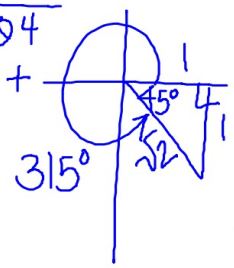
12. $\tan\left(\csc^{-1}(-4)\right)$



Find all values of θ that make each statement true. Draw triangles.

13. $\cos\theta = \frac{\sqrt{2}}{2}$, if $180° < \theta < 360°$

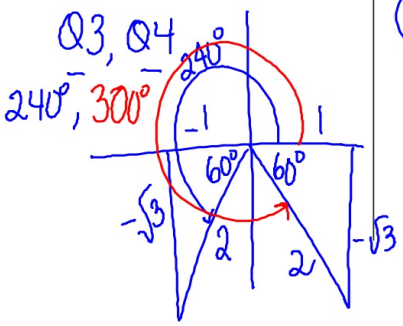
Q3, Q4



14. $\sin\theta = \frac{-\sqrt{3}}{2}$, if $180° < \theta < 360°$

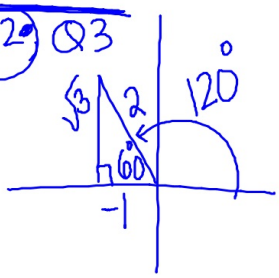
Q3, Q4

240°, 300°



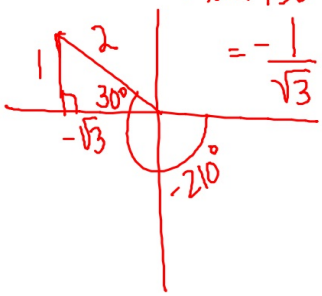
15. $\tan\theta = -\sqrt{3}$, if $90° < \theta < 270°$

Q2, Q3



Find exact values in simplest form. Draw triangles.

16. $\tan(-210°)$ or $\tan 150°$

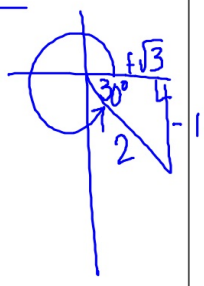


$= -\frac{1}{\sqrt{3}}$

17. $\sec 690°$

$-360°$

$= \sec 330°$

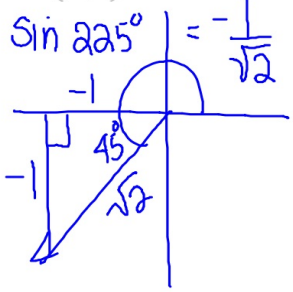


$\frac{2}{\sqrt{3}}$

$\frac{2\sqrt{3}}{3}$

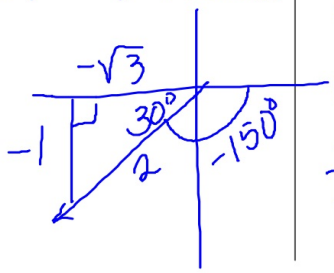
18. $\sin\left(\frac{5\pi}{4}\right)$

$\sin 225° = -\frac{1}{\sqrt{2}}$



19. $\cot\left(\frac{-5\pi}{6}\right) = \frac{\sqrt{3}}{1} = \sqrt{3}$

$\cot(-150°)$ or $\cot 210°$



20. The terminal side of angle θ in standard position passes through (-1, 5). Find the values of all six trigonometric functions of θ.

$\sin\theta = \frac{5}{\sqrt{26}}$

$\cos\theta = \frac{-1}{\sqrt{26}}$ etc

$\tan\theta = -5$