3.	$x = 8, y = 15$ $r = \sqrt{x^2 + y^2} = \sqrt{8^2 + 15^2} = \sqrt{289} = 17$ $\sin \theta = \dfrac{y}{r} = \dfrac{15}{17}$ $\qquad$ $\csc \theta = \dfrac{r}{y} = \dfrac{17}{15}$ $\cos \theta = \dfrac{x}{r} = \dfrac{8}{17}$ $\qquad$ $\sec \theta = \dfrac{r}{x} = \dfrac{17}{8}$ $\tan \theta = \dfrac{y}{x} = \dfrac{15}{8}$ $\qquad$ $\cot \theta = \dfrac{x}{y} = \dfrac{8}{15}$
5.	$x = -7, y = -24$ $r = \sqrt{x^2 + y^2} = \sqrt{(-7)^2 + (-24)^2} = \sqrt{625} = 25$ $\sin \theta = \dfrac{y}{r} = \dfrac{-24}{25} = -\dfrac{24}{25}$ $\cos \theta = \dfrac{x}{r} = \dfrac{-7}{25} = -\dfrac{7}{25}$ $\tan \theta = \dfrac{y}{x} = \dfrac{-24}{-7} = \dfrac{24}{7}$ $\csc \theta = \dfrac{r}{y} = \dfrac{25}{-24} = -\dfrac{25}{24}$ $\sec \theta = \dfrac{r}{x} = \dfrac{25}{-7} = -\dfrac{25}{7}$ $\cot \theta = \dfrac{x}{y} = \dfrac{-7}{-24} = \dfrac{7}{24}$

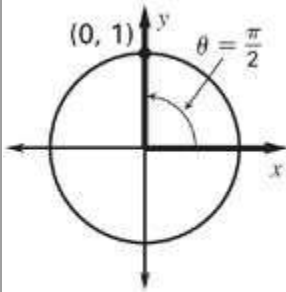|	
7.	$x = 2, y = -2$ $r = \sqrt{x^2 + y^2} = \sqrt{2^2 + (-2)^2} = \sqrt{8} = 2\sqrt{2}$ $\sin \theta = \dfrac{y}{r} = \dfrac{-2}{2\sqrt{2}} = -\dfrac{1}{\sqrt{2}} = -\dfrac{\sqrt{2}}{2}$ $\cos \theta = \dfrac{x}{r} = \dfrac{2}{2\sqrt{2}} = \dfrac{1}{\sqrt{2}} = \dfrac{\sqrt{2}}{2}$ $\tan \theta = \dfrac{y}{x} = \dfrac{-2}{2} = -1$ $\csc \theta = \dfrac{r}{y} = \dfrac{2\sqrt{2}}{-2} = -\sqrt{2}$ $\sec \theta = \dfrac{r}{x} = \dfrac{2\sqrt{2}}{2} = \sqrt{2}$ $\cot \theta = \dfrac{x}{y} = \dfrac{2}{-2} = -1$
9.	$x = -3, y = -5$ $r = \sqrt{x^2 + y^2} = \sqrt{(-3)^2 + (-5)^2} = \sqrt{34}$ $\sin \theta = \dfrac{y}{r} = \dfrac{-5}{\sqrt{34}} = -\dfrac{5\sqrt{34}}{34}$ $\cos \theta = \dfrac{x}{r} = \dfrac{-3}{\sqrt{34}} = -\dfrac{3\sqrt{34}}{34}$ $\tan \theta = \dfrac{y}{x} = \dfrac{-5}{-3} = \dfrac{5}{3}$ $\csc \theta = \dfrac{r}{y} = \dfrac{\sqrt{34}}{-5} = -\dfrac{\sqrt{34}}{5}$ $\sec \theta = \dfrac{r}{x} = \dfrac{\sqrt{34}}{-3} = -\dfrac{\sqrt{34}}{3}$ $\cot \theta = \dfrac{x}{y} = \dfrac{-3}{-5} = \dfrac{3}{5}$
11.	C; $x = -7, y = -4$ $\tan a = \dfrac{y}{x} = \dfrac{-4}{-7} = \dfrac{4}{7}$

13. $x = 0, y = 1, r = 1$

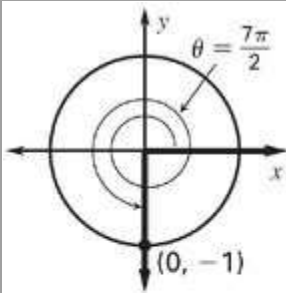$\sin \theta = \dfrac{y}{r} = \dfrac{1}{1} = 1$
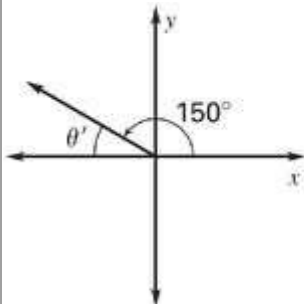
$\csc \theta = \dfrac{r}{y} = \dfrac{1}{1} = 1$

$\cos \theta = \dfrac{x}{r} = \dfrac{0}{1} = 0$

$\sec \theta = \dfrac{r}{x} = \dfrac{1}{0}$ undefined
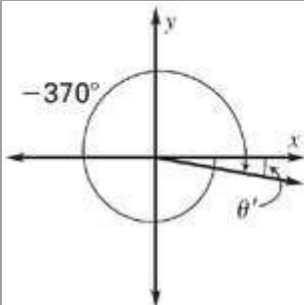
$\tan \theta = \dfrac{y}{x} = \dfrac{1}{0}$ undefined
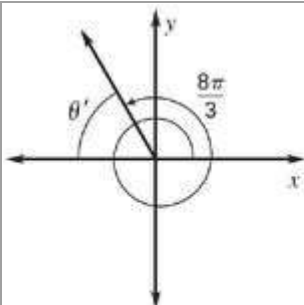
$\cot \theta = \dfrac{x}{y} = \dfrac{0}{1} = 0$

15. $x = 0, y = -1, r = 1$

$\sin \theta = \dfrac{y}{r} = \dfrac{-1}{1} = -1$

$\csc \theta = \dfrac{r}{y} = \dfrac{1}{-1} = -1$

$\cos \theta = \dfrac{x}{r} = \dfrac{0}{1} = 0$

$\sec \theta = \dfrac{r}{x} = \dfrac{1}{0}$ undefined

$\tan \theta = \dfrac{y}{x} = \dfrac{-1}{0}$ undefined

$\cot \theta = \dfrac{x}{y} = \dfrac{0}{1} = 0$

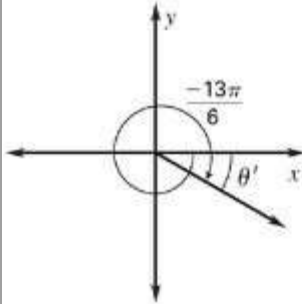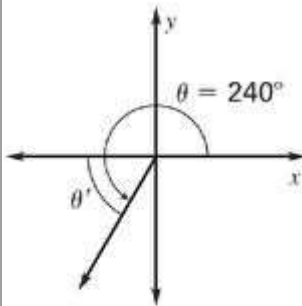| 17. | |
	The terminal side of θ lies in Quadrant II. So, $\theta' = 180° - 150° = 30°$.
19.	
	θ is coterminal with $350°$, whose terminal side lies in Quadrant IV. So, $\theta' = 360° - 350° = 10°$.
21.	
	θ is coterminal with $\dfrac{2\pi}{3}$, whose terminal side lies in Quadrant II. So, $\theta' = \pi - \dfrac{2\pi}{3} = \dfrac{\pi}{3}$.

23.

θ is coterminal with $\dfrac{11\pi}{6}$, whose terminal side lies in

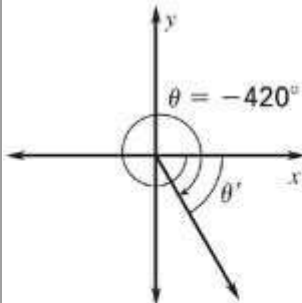Quadrant IV. So, $\theta' = 2\pi - \dfrac{11\pi}{6} = \dfrac{\pi}{6}$.

25.

$\theta' = 240° - 180° = 60°$.

Tangent is positive in Quadrant III.
So, $\tan 240° = \tan 60° = \sqrt{3}$.

27.

θ is coterminal with $300°$. So, $\theta' = 360° - 300° = 60°$.

Cosecant is negative in Quadrant IV.

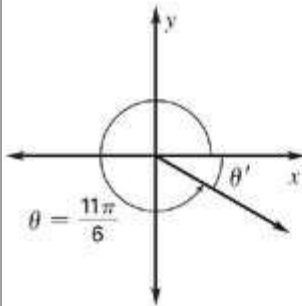So, $\csc(-420°) = -\csc 60° = -\dfrac{2\sqrt{3}}{3}$.

29.
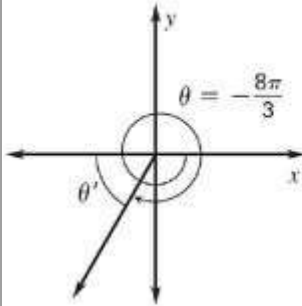
θ is coterminal with $\frac{4\pi}{3}$. So, $\theta' = \frac{4\pi}{3} - \pi = \frac{\pi}{3}$.

Cotangent is positive in Quadrant III.

So, $\cot\left(-\frac{8\pi}{3}\right) = \cot\left(\frac{\pi}{3}\right) = \frac{\sqrt{3}}{3}$.

31.

$\theta' = 2\pi - \frac{11\pi}{6} = \frac{\pi}{6}$.

Secant is positive in Quadrant IV.

So, $\sec\frac{11\pi}{6} = \sec\frac{\pi}{6} = \frac{2\sqrt{3}}{3}$.