1) $5x^2+y^2=5$
$x^2+y^2=4$

Solution

$y^2=5x^2-5$ ... (i)

$x^2+y^2=1$ ... (ii)

substitute y^2 (i) into eqn

$x^2+(5-5x^2)=4$

$x^2-5x^2+5=4$

$-4x^2+5-4=0$

$-4x^2+1=0$

multiply both sides by -1

$4x^2-1=0$

$x=+0.5, -0.5$

sub x in equation (i)

$y^2=5-5(0.5)^2$

$y=\sqrt{15}/2$

differentiating $5x^2+y^2=5$

$\Rightarrow 10x+2y\,dy/dx=0$

$dy/dx=\frac{-10x}{x}=\frac{-5x}{y}$

Differentiating $x^2+y^2=4$

$\Rightarrow 2x+2y\,dy/dx=0$

$dy/dx=-2x/2y=-x/y$

at $x=0.5$, $y=$

$-5x/y=-5(0.5)/\sqrt{5}/2$ $-\sqrt{5}/2$

at $x=-1/2$ $y=\sqrt{15}/2$

$-5x/y=5/(0.5)/\sqrt{15}/2=\sqrt{15}/3$

at $x=1/2$, $y=\sqrt{15}/2$

$-x/y=0.5/\sqrt{5}/2=\sqrt{15}/15$

at $x=-1/2$, $y=\sqrt{15}/2$

$=x/y=1/\sqrt{5}/1=\sqrt{15}/15$

$\tan(\theta_2-\theta_1)=\frac{m_2-m_1}{1+m_2m_1}$

when $m_2=\sqrt{15}/3$, $m_1=+\sqrt{}$

$\tan(\theta_2-\theta_1)=\frac{\sqrt{15}/10-\sqrt{15}/}{0+(\sqrt{15}/10)(\sqrt{}}$

$\tan^{-1}(\sqrt{15}/5)=-37.72$

the angle between them

$180-37.76=142.24^0$.

$f(x) := \sqrt{5 - 5x^2}$ $g(x) := \sqrt{4 - x^2}$