In Exercises 56 – 60, since x and y are in quadrant I, we know that $\sec x = \frac{3}{2} \Rightarrow \cos x = \frac{2}{3}$, so $\sin x = \frac{\sqrt{5}}{3}$ and $\tan x = \frac{\sqrt{5}}{2}$. Also, $\csc y = 3 \Rightarrow \sin y = \frac{1}{3}$, and so $\cos y = \frac{2\sqrt{2}}{3}$ and $\tan y = \frac{1}{2\sqrt{2}} = \frac{\sqrt{2}}{4}$.

56. $\cos(x - y) = \cos x \cos y + \sin x \sin y = \frac{2}{3} \cdot \frac{2\sqrt{2}}{3} + \frac{\sqrt{5}}{3} \cdot \frac{1}{3} = \frac{1}{9}\left(4\sqrt{2} + \sqrt{5}\right)$.

58. $\sin 2x = 2 \sin x \cos x = 2 \cdot \frac{\sqrt{5}}{3} \cdot \frac{2}{3} = \frac{4\sqrt{5}}{9}$.