Practice Quiz 5 (L11-L13)

1. Find the derivatives.

(i) $\frac{d}{dx}\left(\ln\left(\frac{2x-1}{x^2}\right) - 6\tan^{-1}(2x-1)\right)$

(ii) $\frac{dy}{dx}$ if $ye^{3x} = x + y$

2. A 12-ft ladder is leaning against the wall as the base starts to slide away. By the time the base is 8 ft from the wall, the base is moving at the rate of 4 ft/sec.

(i) How fast is the side of the ladder sliding down the wall at this time?

(ii) At what rate is the area formed by the triangle formed by the ladder, ground, and wall changing at this time?

(iii) At what rate is the angle formed by the ladder and the ground changing at this time?