1. $f(x) = \operatorname{arcsec}(\underbrace{x^2 - 3x}_{u})$

$$f'(x) = \frac{1}{|x^2-3x|\sqrt{(x^2-3x)^2-1}} \cdot \frac{d}{dx}(x^2-3x)$$

$$= \boxed{\frac{2x-3}{|x^2-3x|\sqrt{(x^2-3x)^2-1}}}$$

2. $h(x) = \underbrace{x^3}_{P}\ \underbrace{\arcsin(4x)}_{Q}$

$P' = 3x^2 \quad Q' = \frac{1}{\sqrt{1-(4x)^2}} \cdot \frac{d}{dx}(4x)$

$$Q' = \frac{4}{\sqrt{1-16x^2}}$$

$P'Q + PQ'$

$$h'(x) = 3x^2\arcsin(4x) + x^3\left(\frac{4}{\sqrt{1-16x^2}}\right)$$

$$= x^2\left[3\arcsin(4x) + \frac{4x}{\sqrt{1-16x^2}}\right]$$

$$= \boxed{x^2\left[\frac{3\sqrt{1-16x^2}\arcsin(4x) + 4x}{\sqrt{1-16x^2}}\right]}$$