According to Ohm:

$$dr = \frac{dv}{di} = \frac{1}{{}^{di}\!/_{dv}}$$

Let's find the derivative of the Main Diode Formula (let's temporary name exponential part as $\varepsilon(v)$):

$$\frac{d}{dv}\left[I_S(\varepsilon(v)+1)\right] = \frac{d}{dv}(I_S)(\varepsilon(v)+1) + I_S\frac{d}{dv}(\varepsilon(v)+1)$$

First part is zero (derivative from a constant), the second one, due to $(e^u)' = e^u \cdot u'$ becomes:

$$I_S\frac{d}{dv}\varepsilon(v) = I_S e^{{}^{v}\!/_{\eta V_T}} \cdot \frac{1}{\eta V_T}; \qquad \frac{1}{{}^{di}\!/_{dv}} = \frac{\eta V_T}{I_S e^{{}^{v}\!/_{\eta V_T}}}$$

Since we can substitute $I_S e^{{}^{v}\!/_{\eta V_T}}$ with $i + I_S$, than finally:

$$r_D = \frac{\eta V_T}{i_D + I_S} \approx \frac{\eta V_T}{i_D}$$

Again, we can easily drop off 1 because we do not deal now with extremely small currents.
The solution for rDs is rd1A = 0.043 Ohm and rd2A = 0.022 Ohm.
Note that if we take a reciprocal of the differential resistance we can observe corresponding angles of the I-V curve: atan(1/0.043) = 87.5deg and atan(1/0.022) = 88.7deg.