$$\sqrt[3]{(4x+3)^2} = ((4x+3)^2)^{\frac{1}{3}}$$
$$\sqrt[3]{(4x+3)^2} = ((4x+3)^2)^{\frac{1}{3}} = (16x^2+24x+9)^{\frac{1}{3}}$$
$$\sqrt[3]{(4x+3)^2} = ((4x+3)^2)^{\frac{1}{3}} = (4x+3)^{\frac{2}{3}}$$

$$y = ((4x+3)^2)^{\frac{1}{3}}$$
$$y' = \frac{1}{3}((4x+3)^2)^{-\frac{2}{3}} \cdot 2 \cdot (4x+3) \cdot 4 = \frac{8(4x+3)}{3\sqrt[3]{(4x+3)^4}}$$

$$y = (16x^2+24x+9)^{\frac{1}{3}}$$
$$y' = \frac{1}{3}(16x^2+24x+9)^{-\frac{2}{3}} \cdot (32x+24) = \frac{32x+24}{3\sqrt[3]{(16x^2+24x+9)^2}} = \frac{8(4x+3)}{3\sqrt[3]{(4x+3)^4}}$$

$$y = (4x+3)^{\frac{2}{3}}$$
$$y' = \frac{2}{3}(4x+3)^{-\frac{1}{3}} \cdot 4 = \frac{8}{3\sqrt[3]{4x+3}}$$