

$$\text{YT 1 } 9) \int x^3 \sqrt{5x^4 + 20} dx$$

$$u = 5x^4 + 20$$
$$du = 20x^3 dx$$
$$\frac{1}{20} du = x^3 dx$$

$$\frac{1}{20} \int u^{1/2} du$$

$$\frac{1}{20} \cdot \frac{2}{3} u^{3/2} + C = \frac{1}{30} (5x^4 + 20)^{3/2} + C$$

$$\text{YT 2 } 10) \int (x^2 + 1)(x^3 + 3x)^{-5} dx$$

$$u = x^3 + 3x$$
$$du = (3x^2 + 3) dx$$
$$du = 3(x^2 + 1) dx$$
$$\frac{1}{3} du = (x^2 + 1) dx$$

$$\frac{1}{3} \int u^{-5} du =$$

$$\frac{1}{3} \cdot \frac{-1}{-4} u^{-4} + C = -\frac{1}{12} u^{-4} + C$$

$$-\frac{1}{12} (x^3 + 3x)^{-4} + C$$