AP Calculus AB Name_____

U-Substitution and the Reverse Chain Rule

Date_____

Evaluate each indefinite integral.

1) $\int (3x-5)^{-4} \cdot 3x\,dx$

$-\frac{1}{6(3x-5)^2} - \frac{5}{9(3x-5)^3} + C$

2) $\int x\sqrt[3]{5x+4}\,dx$

$\frac{3}{175}(5x+4)^{\frac{7}{3}} - \frac{3}{25}(5x+4)^{\frac{4}{3}} + C$

3) $\int x\sqrt[3]{2x+3}\,dx$

$\frac{3}{28}(2x+3)^{\frac{7}{3}} - \frac{9}{16}(2x+3)^{\frac{4}{3}} + C$

4) $\int (x-5)^5 \cdot 3x\,dx$

$\frac{3}{7}(x-5)^7 + \frac{5}{2}(x-5)^6 + C$

5) $\int 20\sin -4x \cdot (\cos -4x)^{\frac{1}{2}}\, dx$

$\frac{10}{3} \cdot (\cos -4x)^{\frac{3}{2}} + C$

6) $\int 10e^{5x} \cdot (e^{5x} - 4)^{-3}\, dx$

$-\frac{1}{(e^{5x} - 4)^2} + C$

7) $\int \frac{6e^{3x}}{(e^{3x} + 5)^4}\, dx$

$-\frac{2}{3(e^{3x} + 5)^3} + C$

8) $\int \frac{2(-4 + \ln -x)^{-5}}{x}\, dx$

$-\frac{1}{2(-4 + \ln -x)^4} + C$