

Name: \_\_\_\_\_

## Integration by Substitution

1) Use the integration by substitution to find the indefinite integrals.

1)  $\int (2x-3)^7 dx$

2)  $\int x^2 \sqrt{x^3+10} dx$

3)  $\int \frac{2x+3}{(2x^2+6x+1)^2} dx$

4)  $\int \sin^3 x \cos x dx$

5)  $\int \tan^7 x \sec^2 x dx$

6)  $\int x\sqrt{x-2} dx$

7)  $\int 3x^5 \sqrt{x^3+1} dx$

2) Calculate the following integrals

1)  $\int \frac{e^{\frac{1}{x}}}{x^2} dx$

2)  $\int \frac{e^t}{\sqrt{1-e^{2t}}} dt$

3)  $\int xa^{x^2} dx$

4)  $\int \frac{e^t}{1+e^{2t}} dt$

5)  $\int a^{-x} dx$

6)  $\int \frac{e^{\sqrt{x}}}{\sqrt{x}} dx$