$$\frac{p328}{3b} = \frac{p328}{45,41,447,65}$$

$$\frac{38}{40} = \frac{44}{40} = \frac{$$

$$(18) \frac{1}{4} \sin(2x^2) + C$$

$$(20)$$
  $(7x-2)^4 + C$ 

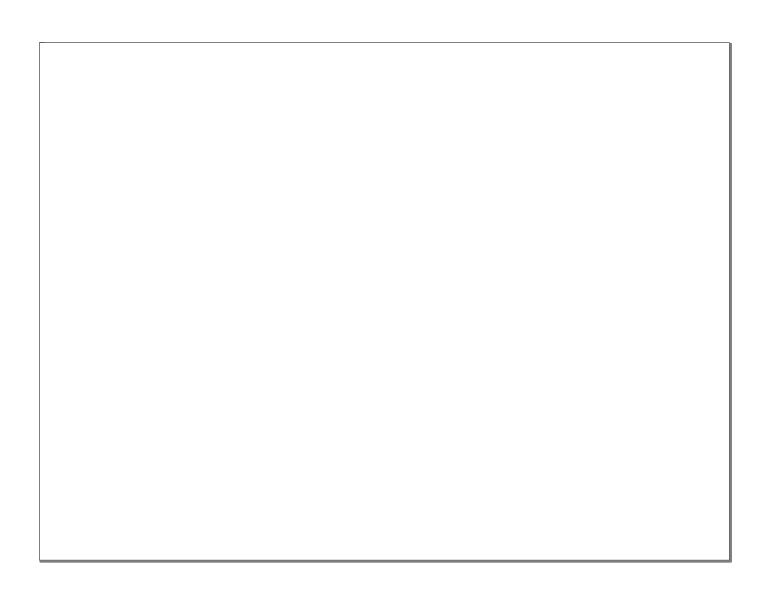
(20) 
$$(7x-2)^{4} + C$$
 (26)  $\tan(x+2) + C$   
(22)  $-6\sqrt{1-r^{3}} + C$  (28)  $scc(Q+\frac{\pi}{2}) + C$ 

20)  $(28(7x-2)^3 dx u = 7x-2)$   $du = 7 dx dx = \frac{4}{7}$   $(22(1/7)(7x-2)^3 du$  $(4)^4 = (7x-2)^4 + c$ 

27.  $u = \tan x$   $du = \sec^2 x dx$   $\int t an x \sec^2 dx$   $\int u'^2 du \Rightarrow \frac{2}{3} (\tan x)^{3/2} + C$   $\frac{2}{3} u^{3/2} + C$ 

## More 6.2 - Using Trig Substitution

(1) 
$$\int \frac{dx}{\cos^2 2x} = \int \sec^2(2x) dx \qquad dx = 2 dx$$
 $= \frac{1}{2} \int \sec^2(2x) dx \qquad dx = 2 dx$ 
 $= \frac{1}{2} \int \sec^2(2x) + C$ 
(2)  $\int \cot^2(3x) dx \qquad \int \sin^2 x + \cos^2 x = 1$ 
 $\int \cot^2(3x) dx \qquad \int \cot^2 x = \csc^2 x$ 
 $\tan^2 x + 1 = \sec^2 x$ 
 $= \frac{1}{3} \int (\csc^2(3x) - 1) dx \qquad \int dx = 3 dx$ 
 $= \frac{1}{3} \int (-\cot x - u) + C = \frac{1}{3} \int (-\cot (3x) - (3x)) + C$ 
 $= \frac{1}{3} \int \cot (3x) - x + C$ 
(3)  $\int \cot 7x dx = \int \frac{\cos 7x}{\sin 7x} dx \qquad u = \sin 7x$ 
 $= \frac{1}{7} \int \frac{du}{u} = \frac{1}{7} \ln |u| + C$ 
 $= \frac{1}{7} \ln |x| + C$ 
(4)  $\int \frac{\pi}{3}$ 
 $\int \cot x dx = \int \frac{\cos 7x}{\sin 7x} dx \qquad u = \tan x$ 
 $\int \cot x dx = \int \frac{\sin 7x}{\sin 7x} dx \qquad u = \tan x$ 
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## U-Substitution with Definite Integrals $\int_{100}^{\pi/3} \frac{u = \tan x}{\tan x}$ $\int_{0}^{\pi/3} \frac{du}{du} = \frac{1}{2}u^{2} \int_{0}^{3} \frac{1}{2}(\sqrt{3})^{2} - \frac{1}{2}(\sqrt{3})^{2}$ $\int_{0}^{\pi/3} \frac{du}{du} = \frac{1}{2}u^{2} \int_{0}^{3} \frac{1}{2}(\sqrt{3})^{2} - \frac{1}{2}(\sqrt{3})^{2}$ $\int u \, du = \frac{1}{2} u^2 = \frac{1}{2} \left( \tan x \right)^2 \Big|_{3}^{\frac{\pi}{3}}$ $= \frac{1}{2} (\tan \frac{\pi}{3})^2 - \frac{1}{2} (\tan 0)^2$ $=\frac{5}{7}(2)_5-\frac{5}{7}(0)_5=\frac{5}{3}$

HW: p338 #33-51 odds, 54-56, 58, 71-76 447 wrong in back