

Name: Solutions

Section: 11 12 13

1. $\arccos(-1/2) = \theta$

$$\Leftrightarrow \cos(\theta) = -1/2$$

$$\Leftrightarrow \theta = \frac{2\pi}{3}$$

2. Find the derivative of $y = \arctan(x^2) + 2^x \arcsin(x)$.

$$y' = \frac{1}{1+(x^2)^2} \cdot 2x + 2^x \cdot \ln 2 \cdot \arcsin x + 2^x \cdot \frac{1}{\sqrt{1-x^2}}$$

3. $\int \frac{3dx}{1+9x^2}$

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

u-sub

$$u = 3x$$

$$du = 3dx$$

$$= \int \frac{du}{1+u^2}$$

$$= \arctan(u) + C = \arctan(3x) + C$$