

MA114 Summer 2018
Worksheet 4 – Trig Substitutions 6/13/18

1. Compute the following integrals.

a) $\int x\sqrt{1-4x^2} dx,$

b) $\int \frac{x}{\sqrt{3-2x-x^2}} dx,$ Hint: Complete the square.

c) $\int \frac{x^2 dx}{(x^2+1)^{3/2}}.$

d) $\int \frac{dy}{\sqrt{y^2 - 9}}$.

2. Is the substitution $u = x^2 - 4$ effective for evaluating the integral $\int \frac{x^2 dx}{\sqrt{x^2 - 4}}$? If not, evaluate using trigonometric substitution.