

## Further Techniques of Integration

### Keywords:

Int. by Parts, Substitution, Trig. Suh., Partial Fraction

### Assignments

1. Compute

$$\int \frac{1}{x^2\sqrt{1-x^2}} dx$$

2. Compute

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

- 3.

$$\int \frac{4-2x}{\sqrt{3-2x-x^2}} dx$$

- 4.

$$\int \frac{1+x+x^2}{1-x^4} dx$$

5. Is the following true? Prove or disprove it.

$$\forall n \geq 1, \int_{-1}^1 \frac{d^n [(x^2-1)^n]}{dx^n} \cdot x^{n-1} dx = 0.$$