

## PROBLEMS:

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

2. 
$$\int \frac{2x+1}{x^2+4x+5} dx$$

3. 
$$\int \frac{x}{x^2+6x+10} dx$$

4. 
$$\int_0^1 \frac{x-1}{x^2+x+1} dx$$

5. 
$$\int \frac{2x-1}{x^2-6x+11} dx$$

6. 
$$\int \frac{4x+10}{x^2+6x+8} dx$$

7. 
$$\int \frac{5x+24}{x^2+10x+24} dx$$

## ANSWERS:

1. 
$$\frac{1}{2} \ln |(x+1)^2+1| + 2 \tan^{-1}(x+1) + C$$

2. 
$$\ln |(x+2)^2+1| - 3 \tan^{-1}(x+2) + C$$

3. 
$$\frac{1}{2} \ln |(x+3)^2+1| - 3 \tan^{-1}(x+3) + C$$

4. 
$$\frac{1}{2} \ln 3 - \frac{\sqrt{3}\pi}{6}$$

5. 
$$\ln |(x-3)^2+2| + \frac{5}{\sqrt{2}} \tan^{-1}\left(\frac{x-3}{2}\right) + C$$

6. 
$$\ln |x+2| + 3 \ln |x+4| + C$$

7. 
$$2 \ln |x+4| + 3 \ln |x+6| + C$$