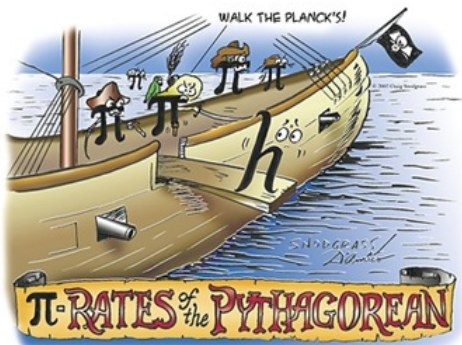


I. Trig Substitution by Completing the Square

1. $\int \frac{1}{(5-4x-x^2)^{3/2}} dx$ (cf. Problem 7)



II. Partial Fractions and Long Division

1. $\int \frac{1}{(x^2+4)(x-3)} dx$ (cf. Problem 27)

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



3. $\int \frac{x^2}{x-1} dx$ (cf. Problem 21)

III. Strategy for Integraton

What techinque(s) would you use to solve the following integrals?

1. $\int \cos(14x) \sin(3x) dx$

2. $\int x^2 \sin(3x) dx$

3. $\int \frac{e^{\arctan t}}{1+t^2} dt$

4. $\int \sin^3 \theta \cos^{19} \theta d\theta$

5. $\int r^5 \ln r dr$

6. $\int \cos^2(5x) dx$

7. $\int \tan^5 \theta \sec^3 \theta d\theta$

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

9. $\int \frac{x-3}{x^2-6x+1} dx$

10. $\int \frac{x-2}{x^2+4x+9}$

11. $\int \frac{3w-1}{w+2} dw$

12. $\int \cos x(1 + \sin^2 x) dx$

13. $\int \frac{dy}{1+e^y}$

14. $\int_{-2}^2 |x^2 - 4x| dx$
