

Homework for section 7.4

Show all work on another sheet of paper. You do not need to write your answers on this sheet.

For problems 1 through 4, use the method of partial fractions. Show all work.

$$1. \int \frac{2t^2 + 4t - 8}{t^3 - 4t} dt \qquad 2. \int \frac{2x^2 + 3}{x(x-1)^2} dx \qquad 3. \int \frac{dv}{v^3 + v} \qquad 4. \int \frac{y^3 + 5y^2 + 7y + 1}{y^2 + 3y} dy$$

For problems 5 through 8, use the method of trigonometric substitution. Show all work.

$$5. \int \frac{dx}{x^2 \sqrt{16 - x^2}} \qquad 6. \int \frac{1}{(t^2 + 9)^{3/2}} dt \qquad 7. \int \frac{y^2}{\sqrt{1 - y^2}} dy \qquad 8. \int \frac{\sqrt{z^2 - 25}}{z} dz$$