Practice test 3

Calculate the following integrals:

$$\int \frac{9x^{17}}{1+x^{36}}\,dx$$

$$\int \ln(1+4x^2)\,dx$$

$$\int \frac{\tan^3 x}{\sec^2 x}\,dx$$

$$\int \frac{4x^3-24x^2+51x-26}{x^4-6x^3+13x^2}\,dx$$

$$\int \frac{\sqrt{16x^2-25}}{x}\,dx$$

Determine whether or not the improper integral converges. If it converges, find its value. If it diverges to $\pm\infty$, specify which one.

$$\int_0^\infty e^{-x}\cos x\,dx$$