

**Improper Integrals Practice (Relay Style)****Evaluate the integral.**

1.  $\int_1^{\infty} \frac{1}{(4x+1)^2} dx$

**Determine if the integral converges or diverges.**

5. If #4 diverges, replace ANS with 0.

$$\int_{2(\text{ANS})-\ln 2}^{\infty} \frac{x+1}{x^2+x+1} dx$$

**Evaluate the integral.**

2. If #1 diverges, replace ANS with 2.

$$\int_0^{80(\text{ANS})} \frac{1}{\sqrt{x}} dx$$

**Determine if the integral converges or diverges.**

6. If #5 diverges, replace ANS with 1.

If #5 converges, replace ANS with 0.

$$\int_{\text{ANS}}^{\infty} \frac{dx}{\sqrt{x^3+x+1}}$$

**Evaluate the integral.**

3. If #2 diverges, replace ANS with 1.

$$\int_{\text{ANS}/2}^{\infty} \frac{x}{x^2+1} dx$$

**Determine if the integral converges or diverges.**

7. If #6 diverges, replace ANS with 0.

If #6 converges, replace ANS with 1.

$$\int_{\text{ANS}}^{\infty} \frac{dx}{x^2+x+1}$$

**Evaluate the integral.**4. If #3 diverges, replace ANS with  $\ln 2$ .

$$\int_{\text{ANS}}^{\infty} x e^{-x} dx$$

**Evaluate the integral.**

8. If #7 diverges, replace ANS with 2.

If #7 converges, replace ANS with 1.

$$\int_0^{\text{ANS}} \frac{dx}{x^{1/3}}$$

