## Improper Integrals - Worksheet

Determine if the following improper integrals are convergent or divergent.

1. 
$$\int_0^1 \frac{dx}{x^{2/3}}$$

6. 
$$\int_{1}^{\infty} \frac{dx}{2x^7 + 9}$$

$$2. \int_{-\infty}^{1} \frac{dx}{(x-2)^2}$$

7. 
$$\int_{1}^{\infty} \frac{2 + \sin x}{\sqrt{x}} dx$$

$$3. \int_{-\infty}^{1} \frac{dx}{(x-2)^2}$$

8. 
$$\int_0^1 \frac{dx}{(\ln x)^2}$$

$$4. \int_0^\infty x e^{-x} dx$$

9. 
$$\int_0^1 \frac{\cos x}{x^{5/6}} dx$$

$$5. \int_{-\infty}^{\infty} \frac{dx}{9+x^2}$$

10. 
$$\int_0^\infty \frac{x^3 + 3}{2 + \sqrt{x}} dx$$

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