

Math Sheet

Name _____ Score _____ Teacher _____ Date _____

Improper Integrals

Rewrite each integral as the required one-sided limit, split at every interior singularity, and classify convergence before evaluating. Do not use principal values.

1. Classify and, if convergent, evaluate integral from 0 to 3 of $3/\sqrt{x}$ dx.

2. Classify and, if convergent, evaluate integral from -4 to 4 of $3/|x|$ dx. Split at $x = 0$; do not use a principal value.

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Rewrite each integral as the required one-sided limit, split at every interior singularity, and classify convergence before evaluating. Do not use principal values.

3. Classify and, if convergent, evaluate integral from 0 to 3 of $3/x$ dx.

4. Classify and, if convergent, evaluate integral from 4 to infinity of $2/x^2$ dx.

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Improper Integrals

Rewrite each integral as the required one-sided limit, split at every interior singularity, and classify convergence before evaluating. Do not use principal values.

5. Classify and, if convergent, evaluate integral from -3 to 3 of $\frac{3}{\sqrt{|x|}}$ dx. Split at $x = 0$; do not use a principal value.

6. Classify and, if convergent, evaluate integral from 3 to infinity of $\frac{3}{x^1}$ dx.
