

Evaluate the integral

1. $\int_e^{\infty} \frac{1}{x(\ln x)^3} dx$

2. $\int_0^1 \frac{3}{x^5} dx$

3. $\int_2^3 \frac{1}{\sqrt{3-x}} dx$

4. $\int_{-2}^{14} \frac{dx}{\sqrt[4]{x+2}}$

5. $\int_6^8 \frac{4}{(x-6)^3} dx$

6. $\int_{-2}^3 \frac{1}{x^4} dx$

Evaluate the integral

7. $\int_0^1 \frac{dx}{\sqrt{1-x^2}}$

8. $\int_0^9 \frac{1}{\sqrt[3]{x-1}} dx$

9. $\int_0^5 \frac{w}{w-2} dw$

10. $\int_0^3 \frac{dx}{x^2-6x+5}$

Review Problems:

11. $\lim_{x \rightarrow 0} \frac{x}{\tan x}$

A. -1

B. 0

C. 1

D. π

E. Does not exist

12. $\lim_{x \rightarrow 1} \frac{1 - \frac{1}{x}}{1 - \frac{1}{x^2}}$

A. -1

B. $\frac{1}{2}$

C. 1

D. 0

E. Does not exist

Answers:

1. $\frac{1}{2} \therefore$ Converges

2. Diverges

3. 2 \therefore Converges

4. $\frac{32}{3} \therefore$ Converges

5. Diverges

6. Diverges

7. $\frac{\pi}{2} \therefore$ Converges

8. $\frac{9}{2} \therefore$ Converges

9. Diverges

10. Diverges

11. C

12. B