

Q1) Evaluate the integrals in parts (c) and (d):

$$(c) \int \frac{x^2}{(4-x^2)^{\frac{3}{2}}} dx$$

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$$(d) \int \frac{x+2}{(x-1)(x^2+1)} dx$$

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Q2) In parts (a) and (b), determine whether the integrals converge or diverge. If any of them converge, find its value.

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

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$$(b) \int_0^1 \ln x dx$$