

Question 1: Determine $\int_1^e x^3 \ln(x) dx$

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Question 2: Determine $\int (x^2 - 5x) \sin(x) dx$

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Question 3: Determine $\int \cos^5(x) dx$

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Question 4: Determine $\int \sec^4(3x) \tan^2(3x) dx$

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Question 5: Determine $\int \frac{x^2}{\sqrt{9-x^2}} dx$

Question 6: Determine $\int \frac{x^2}{(x-1)(x+1)^2} dx$

Question 7: Determine $\int \frac{x^3 + x + 2}{x^2 + 4} dx$

[5]

Question 8: Determine $\int \frac{1}{x^2 + 4x + 8} dx$

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