

Problems for Gateway #2: Evaluating Areas Under Curves

1. Evaluate the area represented by the integral notation: $\int_0^1 x^2 \cdot dx.$
2. Evaluate the area represented by the integral notation: $\int_0^1 x \cdot dx.$
3. Evaluate the area represented by the integral notation: $\int_0^1 (1+x) \cdot dx.$
4. Evaluate the area represented by the integral notation: $\int_0^1 e^x \cdot dx.$
5. Evaluate the area represented by the integral notation: $\int_1^e \frac{1}{x} \cdot dx.$
6. Evaluate the area represented by the integral notation: $\int_0^\pi 1 \cdot dx.$
7. Evaluate the area represented by the integral notation: $\int_0^2 (1-x) \cdot dx.$
8. Evaluate the area represented by the integral notation: $\int_{-\pi/2}^{\pi/2} x \cdot dx.$
9. Evaluate the area represented by the integral notation: $\int_0^1 x^3 \cdot dx.$
10. Evaluate the area represented by the integral notation: $\int_0^1 (1+x^2) \cdot dx.$

Answers

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| 1. | Area = 1/3. | 2. | Area = 1/2. | 3. | Area = 3/2. | 4. | Area = $e^1 - 1.$ |
| 5. | Area = 1. | 6. | Area = $\pi.$ | 7. | Area = 0. | 8. | Area = 0. |
| 9. | Area = 1/4. | 10. | Area = 4/3. | | | | |