

Problems for Gateway #2: Antiderivatives of Power Functions

1. Calculate the antiderivative of: $f(x) = x^2$.
2. Calculate the antiderivative of: $f(x) = 2 \cdot x^3$.
3. Calculate the antiderivative of: $f(x) = 4 \cdot x^8$.
4. Calculate the antiderivative of: $f(x) = 3 \cdot x^2$.
5. Calculate the antiderivative of: $f(x) = 7 \cdot x^6$.
6. Calculate the antiderivative of: $f(x) = x^5$.
7. Calculate the antiderivative of: $f(x) = 2 \cdot x^9$.
8. Calculate the antiderivative of: $f(x) = 6 \cdot x^2$.
9. Calculate the antiderivative of: $f(x) = 9 \cdot x^8$.
10. Calculate the antiderivative of: $f(x) = 2 \cdot x^6$.

Answers

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| 1. | $F(x) = \frac{1}{3}x^3 + C$ | 2. | $F(x) = \frac{1}{2}x^4 + C$ | 3. | $F(x) = \frac{4}{9}x^9 + C$ |
| 4. | $F(x) = x^3 + C$ | 5. | $F(x) = x^7 + C$ | 6. | $F(x) = \frac{1}{6}x^6 + C$ |
| 7. | $F(x) = \frac{2}{10}x^{10} + C$ | 8. | $F(x) = \frac{6}{3}x^3 + C$ | 9. | $F(x) = x^9 + C$ |
| 10. | $F(x) = \frac{2}{7}x^7 + C$ | | | | |