Name : _____ Score : _____

Teacher : _____ Date : _____

Second Fundamental Theorem of Calculus

Find F'(x) for each problem.

1) $F(x) = \int_{-9}^{2x^2} (2t^2 - 7t + 4)\, dt$

2) $F(x) = \int_{x}^{3x} (-6t - 3)\, dt$

3) $F(x) = \int_{3}^{3x} (3t - 4)\, dt$

4) $F(x) = \int_{x}^{3x^3} (-t^2 - 4t + 4)\, dt$

5) $F(x) = \int_{0}^{3x^2} (-t^2 - 3t + 3)\, dt$

6) $F(x) = \int_{x}^{2x} (-t^2 - 7t + 4)\, dt$

7) $F(x) = \int_{x}^{3x^2} (4t^2 - 6t + 1)\, dt$

8) $F(x) = \int_{2}^{x} (3t^3 - 4t^2 - 6t - 2)\, dt$

9) $F(x) = \int_{6}^{2x^3} (7t^3 + 7t^2 - 7t + 4)\, dt$

10) $F(x) = \int_{-10}^{x} (3t^3 - t^2 - 5t - 6)\, dt$

11) $F(x) = \int_{-6}^{x} (4t - 2)\, dt$

12) $F(x) = \int_{1}^{x} (-7t + 2)\, dt$

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Second Fundamental Theorem of Calculus

Find F'(x) for each problem.

1) $F(x) = \int_{-9}^{2x^2} (2t^2 - 7t + 4)\,dt$

$F'(x) = 32x^5 - 56x^3 + 16x$

2) $F(x) = \int_{x}^{3x} (-6t - 3)\,dt$

$F'(x) = -48x - 6$

3) $F(x) = \int_{3}^{3x} (3t - 4)\,dt$

$F'(x) = 27x - 12$

4) $F(x) = \int_{x}^{3x^3} (-t^2 - 4t + 4)\,dt$

$F'(x) = -81x^8 - 108x^5 + 37x^2 + 4x - 4$

5) $F(x) = \int_{0}^{3x^2} (-t^2 - 3t + 3)\,dt$

$F'(x) = -54x^5 - 54x^3 + 18x$

6) $F(x) = \int_{x}^{2x} (-t^2 - 7t + 4)\,dt$

$F'(x) = -7x^2 - 21x + 4$

7) $F(x) = \int_{x}^{3x^2} (4t^2 - 6t + 1)\,dt$

$F'(x) = 216x^5 - 108x^3 - 4x^2 + 12x - 1$

8) $F(x) = \int_{2}^{x} (3t^3 - 4t^2 - 6t - 2)\,dt$

$F'(x) = 3x^3 - 4x^2 - 6x - 2$

9) $F(x) = \int_{6}^{2x^3} (7t^3 + 7t^2 - 7t + 4)\,dt$

$F'(x) = 336x^{11} + 168x^8 - 84x^5 + 24x^2$

10) $F(x) = \int_{-10}^{x} (3t^3 - t^2 - 5t - 6)\,dt$

$F'(x) = 3x^3 - x^2 - 5x - 6$

11) $F(x) = \int_{-6}^{x} (4t - 2)\,dt$

$F'(x) = 4x - 2$

12) $F(x) = \int_{1}^{x} (-7t + 2)\,dt$

$F'(x) = -7x + 2$