

Name : _____

Score : _____

Teacher : _____

Date : _____

Second Fundamental Theorem of Calculus

Find $F'(x)$ for each problem.

$$1) F(x) = \int_{-5}^{2x^2} (-t - 6) dt$$

$$2) F(x) = \int_7^{3x} (-4t - 5) dt$$

$$3) F(x) = \int_1^x (6t^2 + 5t) dt$$

$$4) F(x) = \int_{-9}^x (5t^3 - 6t^2 - 7t + 3) dt$$

$$5) F(x) = \int_4^x (-3t^3 - 5t^2 - 5t + 5) dt$$

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

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

$$8) F(x) = \int_{-1}^{3x^2} (-4t) dt$$

$$9) F(x) = \int_8^{2x^3} (-3t - 5) dt$$

$$10) F(x) = \int_{-4}^x (2t^2 - 3t) dt$$

$$11) F(x) = \int_{-2}^x (3t^3 - t^2 - 5t + 6) dt$$

$$12) F(x) = \int_0^x (7t + 1) dt$$



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Second Fundamental Theorem of Calculus

Find $F'(x)$ for each problem.

$$1) F(x) = \int_{-5}^{2x^2} (-t - 6) dt$$

$$F'(x) = -8x^3 - 24x$$

$$2) F(x) = \int_7^{3x} (-4t - 5) dt$$

$$F'(x) = -36x - 15$$

$$3) F(x) = \int_1^x (6t^2 + 5t) dt$$

$$F'(x) = 6x^2 + 5x$$

$$4) F(x) = \int_{-9}^x (5t^3 - 6t^2 - 7t + 3) dt$$

$$F'(x) = 5x^3 - 6x^2 - 7x + 3$$

$$5) F(x) = \int_4^x (-3t^3 - 5t^2 - 5t + 5) dt$$

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

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

$$F'(x) = 81x^3 - 18x + 18$$

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

$$F'(x) = 144x^8 - 84x^5 + 24x^2$$

$$8) F(x) = \int_{-1}^{3x^2} (-4t) dt$$

$$F'(x) = -72x^3$$

$$9) F(x) = \int_8^{2x^3} (-3t - 5) dt$$

$$F'(x) = -36x^5 - 30x^2$$

$$10) F(x) = \int_{-4}^x (2t^2 - 3t) dt$$

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

$$11) F(x) = \int_{-2}^x (3t^3 - t^2 - 5t + 6) dt$$

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

$$12) F(x) = \int_0^x (7t + 1) dt$$

$$F'(x) = 7x + 1$$

