Practice worksheet | Integration

Fundamental theorem of calculus

Name: _____ Date: _____

6 questions | 18 marks

1. $A(x) = \int_0^x (3t^2 - 1)\,dt$. Find $A'(x)$. [3 marks]

2. $B(x) = \int_1^{x^2} t^3\,dt$. Find $B'(x)$. [3 marks]

3. $C(x) = \int_0^{3x+1} \sin t\,dt$. Find $C'(x)$. [3 marks]

4. $D(x) = \int_0^{1-x} e^t\,dt$. Find $D'(x)$. [3 marks]

5. $A(x) = \int_0^{x} (2t+1)\,dt$. Evaluate A first, then differentiate to check the theorem. [3 marks]

6. $F'(x) = f(x)$ and $F(2) - F(0) = 7$. Find $\int_0^{2} f(x)\,dx$. [3 marks]