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| | Klasse: 20 | | Dato: 7. september 2022 | Fag: Matematik A |

Opgave 372

$$T(0; 2)$$

$$P_0(5; 4)$$

Opstil generel formel for funktion med toppunkt og et punkt

$$f(x) = a(x - x_0)^2 + y_0$$

$$4 = a(5 - 0)^2 + 2$$

$$4 = a \cdot 25 + 2$$

Isoler a

$$2 = a \cdot 25$$

$$\frac{2}{25} = a$$

$$a = \frac{2}{25}$$

Indsæt a i original formel

$$f(x) = \frac{2}{25}(x - 0)^2 + 2$$

$$f(x) = \frac{2}{25}x^2 + 2$$

$$F(x) = \int f(x) dx$$

$$\text{Define: } F(x) = \frac{2}{75}x^3 + 2x$$

$$x_1 = 1$$

$$x_2 = 5$$

$$A = [F(x)]_1^5$$

$$A = F(5) - F(1) \approx 11,30667$$

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