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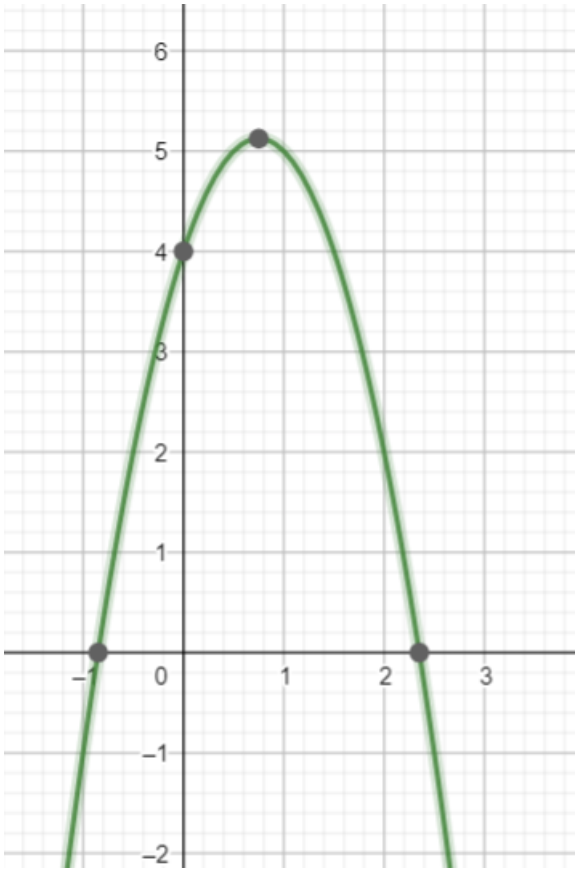
Opgave 364



Start med at finde skæringpunkter med x-aksen

$$f(x) = -x^2 + 3x + 4$$

$$a = -1$$
$$b = 3$$
$$c = 4$$

$$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$
$$x_{1,2} = \frac{-3 \pm \sqrt{3^2 - 4 \cdot (-1) \cdot 4}}{2 \cdot (-1)}$$

$$x_1 = \frac{-3 + \sqrt{3^2 - 4 \cdot (-1) \cdot 4}}{2 \cdot (-1)} = -1$$
$$x_2 = \frac{-3 - \sqrt{3^2 - 4 \cdot (-1) \cdot 4}}{2 \cdot (-1)} = 4$$

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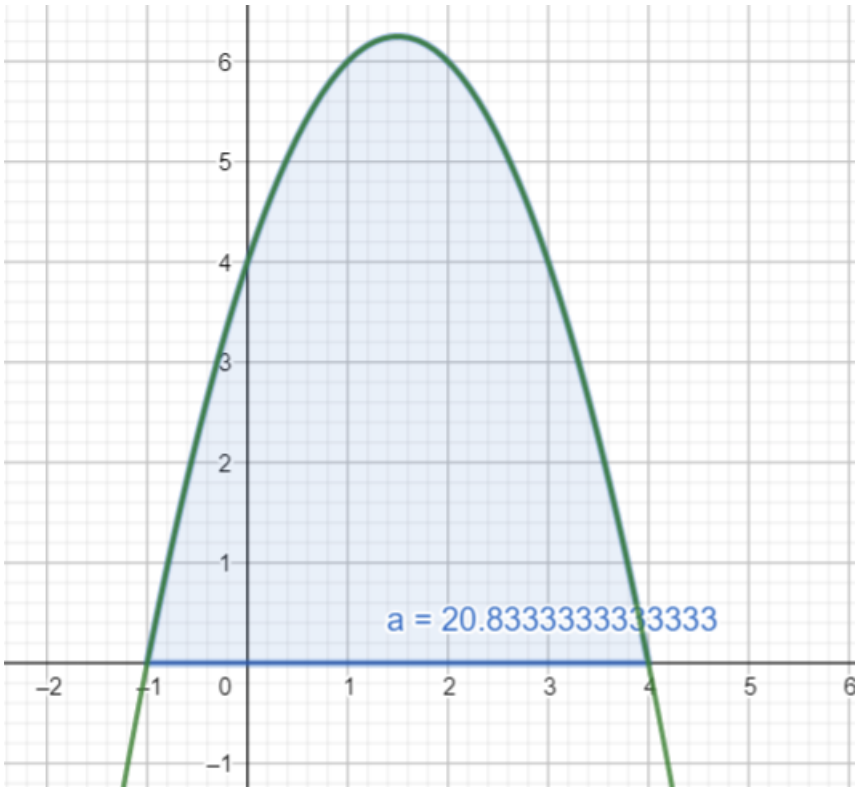

$$\int_{-1}^{4} -x^2 + 3x + 4 \, dx$$

$$Define: F(x) = -\frac{1}{3}x^3 + \frac{3}{2}x^2 + 4x$$

$$A = F(4) - F(-1) \approx 20{,}83333$$