	Navn:		Skole:	
	Klasse: 20		Dato: 27. marts 2022	Fag: Matematik A

Opgave 322

$$f(x) = x^3 + x^2 - 5x + 2$$

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

Find maks og min

$$0 = 3x^2 + 2x - 5$$

Keoffificneterne

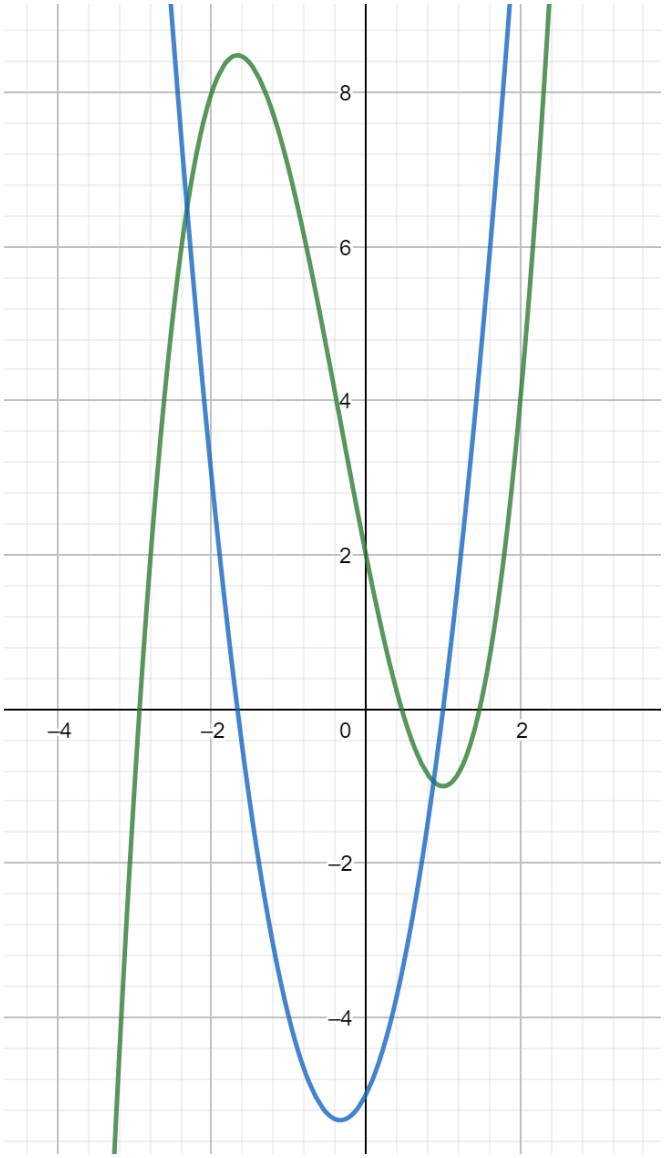
$$a = 3$$
$$b = 2$$
$$c = -5$$

$$d = b^2 - 4ac$$
$$d = 2^2 - 4 \cdot 3 \cdot (-5)$$
$$d = 64$$

$$x_{1,2} = \frac{-b \pm \sqrt{d}}{2a}$$

$$x_1 = \frac{-2 + \sqrt{64}}{2 \cdot 3}$$
$$x_1 = 1$$

$$x_2 = \frac{-2 - \sqrt{64}}{2 \cdot 3}$$
$$x_2 = -1{,}666667$$



$$M_1(1, y_1)$$
$$M_2(-1.67, y_2)$$

$$y_1 = f(x_1)$$
$$y_1 = f(1)$$
$$y_1 = 1^3 + 2^3 - 5 \cdot 1 + 2$$
$$y_1 = 6$$

$$y_2 = f(x_2)$$
$$y_2 = (-1.67)^3 + (-1.67)^2 - 5 \cdot (-1.67) + 2$$
$$y_2 = 8{,}481437$$