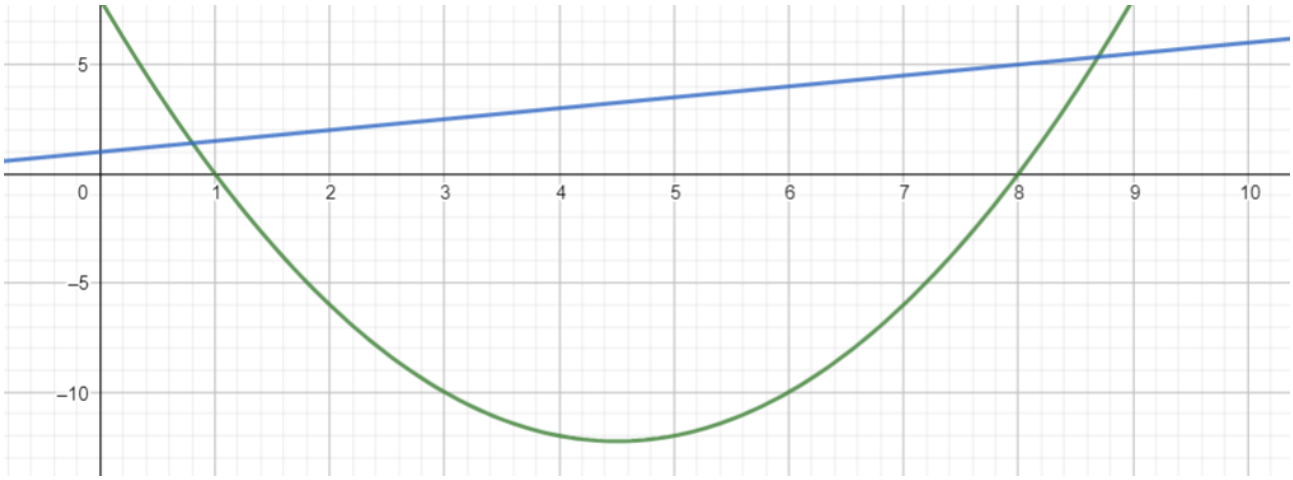
	Navn:		Skole:	
	Klasse: 20		Dato: 14. september 2022	Fag: Matematik A

Opgave 374

$$f(x) = x^2 - 9x + 8$$
$$g(x) = 0.5x + 1$$



Find skæringpunkter

$$f(x) = g(x)$$
$$x^2 - 9x + 8 = 0.5x + 1$$
$$x^2 - 9x - 0.5x + 8 - 1 = 0$$
$$x^2 - 9.5x + 7 = 0$$

$$a = 1$$
$$b = -9.5$$
$$c = 7$$

$$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$
$$x_{1,2} = \frac{-(-9.5) \pm \sqrt{(-9.5)^2 - 4 \cdot 1 \cdot 7}}{2 \cdot 1}$$

$$Define: x_1 = 0{,}8050665$$
$$Define: x_2 = 8{,}694933$$

Find areal

$$F(x) = \int_{x_1}^{x_2} g(x) - f(x)$$
$$Define: F(x) = \frac{0.5}{2}x^2 + x - \frac{1}{3}x^3 + \frac{9}{2}x^2 - 8x$$

$$A = [F(x)]_{x_1}^{x_2}$$
$$A = F(x_2) - F(x_1) \approx 81{,}85737$$