

$$f := x \mapsto x^3 + x + 3$$

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(1)

$\text{solve}(f(x) = 5 + e, x)$

$$\frac{\left(216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336}\right)^{1/3}}{6}$$

(2)

$$\begin{aligned} & - \frac{2}{\left(216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336}\right)^{1/3}}, \\ & - \frac{\left(216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336}\right)^{1/3}}{12} \\ & + \frac{1}{\left(216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336}\right)^{1/3}} \\ & + \frac{1}{2} \left( I\sqrt{3} \left( \frac{\left(216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336}\right)^{1/3}}{6} \right. \right. \\ & \left. \left. + \frac{2}{\left(216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336}\right)^{1/3}} \right) \right) \\ & - \frac{\left(216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336}\right)^{1/3}}{12} \\ & + \frac{1}{\left(216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336}\right)^{1/3}} \\ & - \frac{1}{2} \left( I\sqrt{3} \left( \frac{\left(216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336}\right)^{1/3}}{6} \right. \right. \\ & \left. \left. + \frac{2}{\left(216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336}\right)^{1/3}} \right) \right) \\ & \frac{\left(216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336}\right)^{1/3}}{6} \\ & - \frac{2}{\left(216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336}\right)^{1/3}} \end{aligned}$$

Warning, if e is meant to be the exponential e, use command/symbol completion or palettes to enter this special symbol, or use the exp function

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function

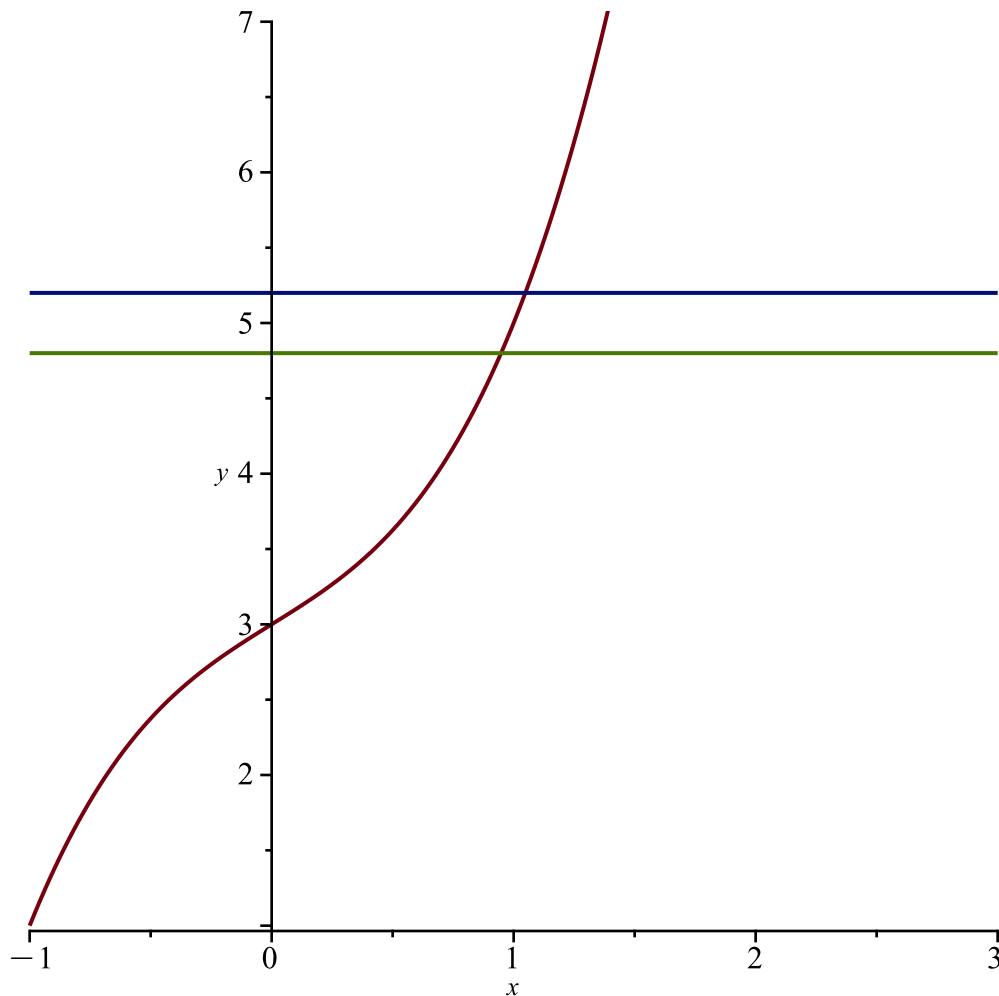
$$\frac{(216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336})^{1/3}}{6} \quad (3)$$

$$- \frac{2}{(216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336})^{1/3}}$$

*normal(%)*

$$\frac{(216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336})^{2/3} - 12}{6 (216 + 108 e + 12 \sqrt{81 e^2 + 324 e + 336})^{1/3}} \quad (4)$$

*plot([f(x), 5 + .2, 5 - .2], x=-1..3, y=1..7)*



*solve(f(x) = 5 + .4, x)*

$$1.093272342, -0.5466361708 + 1.377110493 I, -0.5466361708 - 1.377110493 I \quad (5)$$

*evalf(%)*

$$1.093272342, -0.5466361708 + 1.377110493 I, -0.5466361708 - 1.377110493 I \quad (6)$$