Solve for x

① $2\log_3(5x-1)-4=30$

② $8e^{5x-7}-2=4$

③ $15+\log_e(27x-3)=4$

④ $\frac{5^{2x-7}}{4}+3=7$

⑤ $7(5^x) = 4(5^{2x})$

⑥ $\log_e(4x^2 - 2x) = \log_e(2x) - 37$

⑦ $2(e^x)^{5x^2} + 8 = 9$

⑧ $\log_e(3x - 7) = -8$

Graphing Rational functions

$$r(x) = \frac{8(x-3)}{-5(x+1)(x^2-x+4)}$$

① What are the vertical asymptotes?

② What are the x-intercepts?

③ Is $r(x)$ positive or negative between pairs of points from ① & ②?

④ What's the leading term of $8(x-3)$? Of $-5(x+1)(x^2-x+4)$?
What's the quotient of those leading terms?

⑤ What does the graph of $r(x)$ look like on the right and left?

⑥ Graph $r(x)$.

Graphing exponentials and logarithms

① Graph e^x

② Graph $\log_e(x)$

③ Graph e^{x-3}

④ Graph $-2\log_e(x)$

⑤ Graph $f:(-1,1] \to \mathbb{R}$
where $f(x)=e^x$

⑥ Graph $g:(0,1) \to \mathbb{R}$
where $g(x)=\log_e(x)$