$= 5^3 \cdot 5^{\frac{4}{4}} = 5^{3+1} = 5^4 = 625$ ③

2а) $12^{2x-1} = \frac{(12^x)^2}{12}\Big|_{12^x=3} = \frac{3^2}{12} = \frac{9}{12} = \frac{3}{4}$

б) $8^{-x+2} = \frac{8^2}{8^x}\Big|_{8^x=5} = \frac{64}{5} = 12{,}8$

в) $2^{2x-2} = \frac{(2^x)^2}{2^2}\Big|_{2^x=10} = \frac{10^2}{4} = \frac{100}{4} = 25$

г) $3^{-x+3} = \frac{3^3}{3^x}\Big|_{3^x=54} = \frac{27}{54} = \frac{1}{2}$

3а) $\left(\frac{1}{5}\right)^{2-3x} = 25 \Rightarrow 5^{-(2-3x)} = 5^2 \Rightarrow -2+3x = 2 \Rightarrow 3x = 2+2 \Rightarrow$

$3x = 4 \quad x = \frac{4}{3}$

б) $(0{,}1)^{2x-3} = 10 \Rightarrow 10^{-(2x-3)} = 10^1 \Rightarrow -2x+3 = 1 \Rightarrow$

$2x = 2 \quad x = 1$ в) - не видно

г) $4^x + 2^x - 20 = 0 \Rightarrow 2^{2x} + 2^x - 20 = 0 \quad 2^x = t; \ 2^{2x} = t^2$

$t^2 + t - 20 = 0 \quad t_1 + t_2 = -1 \quad t_1 t_2 = -20 \quad t_1 = -5 \quad t_2 = 4$

Т.к любая степень положительного числа есть число положительное, то выбираем $t = 4$

$2^x = 4 \Rightarrow 2^x = 2^2 \Rightarrow x = 2$

д) $9^x - 7 \cdot 3^x - 18 = 0 \Rightarrow 3^{2x} - 7 \cdot 3^x - 18 = 0 \quad 3^x = t; \ 3^{2x} = t^2$

$t^2 - 7t - 18 = 0 \quad t_1 + t_2 = 7 \quad t_1 t_2 = -18 = -9 \cdot 2$

$t_1 = 9 \quad t_2 = -2$ выбираем $t = 9 = 3^2$

$3^x = 3^2 \Rightarrow x = 2$