3.5A HW

Section 3.5
p. 331: 1-15 odd, 26, 28

① $x=10$ ③ $x=12$ ⑤ $x=-3$ ⑦ $x=10,000$ ⑨ $x=\dfrac{21}{4}$

⑪ $x=24.22$ ⑬ $x=39.61$ ⑮ $x=-.41$ ㉖ $x=7.39$ ㉘ $x=7.39$

Solutions

① $\left(\frac{1}{3}\right)^{x/5}=\frac{1}{9}$

$\left(\frac{1}{3}\right)^{x/5}=\left(\frac{1}{3}\right)^{2}$

$\frac{x}{5}=2 \Rightarrow x=10$

③ $5^{x/4}=125$

$5^{x/4}=5^{3}$

$\frac{x}{4}=3 \Rightarrow x=12$

⑤ $10^{-x/3}=10$

$\frac{-x}{3}=1$

$x=-3$

⑦ $10^{4}=x$

10000

⑨ $4^{-1}=x-5$

$\frac{1}{4}=x-5$

$\frac{21}{4}=x$

⑪ $x=\log_{1.06}4.1$

$x=24.22$

⑬ $e^{.035x}=4$

$.035x=\ln 4$

$x=39.61$

⑮ $2e^{-x}=3$

$e^{-x}=3/2$

$-x=\ln 3/2$

$x=-.41$

㉖ $2\ln x=4$

$\ln x=2$

$e^{2}=x$

$7.39=x$

㉘ $6\ln x=12$

$\ln x=2$

$e^{2}=x$

$7.39=x$