Practice exam 1 answers (w/o work):

1. The values are:
   I_B =5.45mA,
   I_{R1} =5.45mA,
   I_{R2} =3.27mA,
   I_{R3} =2.18mA,
   V_B =12V,
   V_{R1} =5.45V,
   V_{R2} =V_{R3} =6.55V.
2. 6.542V which is very close the result with an ideal meter.
3. $V_c = -1\mu V \sin\left(\frac{200rad}{s}t\right)$
4. z=jwL=j 942Ω
5. Put your hand in your pocket.
6. The ground of the oscilloscope is linked to the ground of the power grid, they have the same electrical potential.
7. $V_{rms} = V_{amplitude/\sqrt{2}}$.
8. The instantaneous power $P(t) = I(t)V(t) = -500nW \cos\left(\frac{200rad}{s}t\right)\sin\left(\frac{200rad}{s}t\right)$ and the average power over one complete cycle is 0W exactly.