1. Tips.

Slightly skew to R.

$m = 9.60$, Sd.(σ) = 3.30.

a) dist is skewed, can't use Normal model.

b) No, 4 sample size is not a large sample to use CLT

c) 10 may not large to use Normal.

But we know $m = 9.60$, $\sigma = 3.30$, so $\bar{y}$ will be distributed around 9.60 w/ s.d. $SD(\bar{y}) = \frac{3.3}{\sqrt{9}} = 1.1$

We don't know exact distribution, but mean tips of \$15 is over 3 s.d. above. That's not very likely to happen.

Problem 2. t-distribution.

a) 1.740

b) 2.377.

c) as d.f. ↑, shape and center does not change.
spredd of t-dist. decreases.
shape become closer to Normal.

d) as d.f. ↑ the critical value of t for 95% C.I.
gets smaller, ~~approaching~~ approaching 1.96

Problem 3.

a) ① Indep.?

② home value is near Normal?

③ unimodal symmetric or large sample?

b) $\bar{y} \pm t^*_{n-1}\left(\frac{s}{\sqrt{n}}\right) = 9560 \pm t^*_{35}\left(\frac{1500}{\sqrt{36}}\right)$

$= 9560 \pm 2.030 \times 250.$

$\approx (9052.50, 10067.25)$

c) larger s.d. increase C.I (the width)

e) correct. b/c. we could narrow C.I. w/o sacrificing confidence.

d) Your friend is right. lower confidence level, narrower