Problem #1. The Menominee verb forms have the following structure:

- **Intransitive verb:**
  - kaw down
  - ket out
  - kësk through
  - pahk off
  - pëhk open
  - pit hither
  - taw Pierce
  - wack around
  - wëp begin

- **Transitive verb:**
  - -ah by tool
  - -aht by mouth
  - -en by hand
  - -es cutting

If both first vowels in the word are short, the second becomes long (e > ä).

(a) • kekëskahæq: we₁+₂ chop it through, break it through by tool
   • nepähkenan:
     - I open, uncover it by hand (pëhkh),
     - I break it off, tear it off by hand (pëhkh)
   • wëpëhpew: he begins laughing

(b) • I begin to eat it: newëpahstan
   • we₁+₂ lay it flat by hand: kekëwenæq
   • he digs a hole: tawänæhkæw
   • he walks out: ketôlnæw

Problem #2.

(a) bøga [bɔva]  
   knødar [knoaɾ]  
   kvøðæ [kvɔːaɾ]  
   løægur [lɔːvøɾ]  
   plågæ [plɔːva]  
   skæði [skæði]  
   tojøgur [tɔjøɾ]  
   trúgi [truwi]

(b) In the first syllable a [a], á [aː], e [ɛ], ei [ai], ey [ɛi], i [i], o [o], oy [oi], ð [u], u [u], ü [uː], ø [ø].

Between vowels ð = g. The first applicable rule is applied:

1. ð/g [w] | [u(ː)] —
2. ð/g [j] | [i(ː)] or — [i(ː)];
3. ð/g [v] | — [u(ː)];
4. ð/g [v] in a noun, [θ] in a verb.
Problem #3. Rules:

1. Adjectives follow their nouns.

2. A noun (or the adjective if there is one) gets the marker -é, unless it is inalienably possessed (body part, kinship term); in the latter case it is preceded by the possessor.

3. Alienable possession is expressed by á between the possessor and the possessed.

4. In compound nouns the last syllable has low tone (“”).

(a) m̤usúč á gb̤omúč: the woman’s fish
l̤éŋ k̤úndúč á ny̤imi̤č: the short child’s snake
gb̤omúč-l̤ándé k̤úndúč: the short boat

(b) k̤ándó-l̤ándé b̤ōč: the small airplane

(c) the eagle’s snake: k̤o̤ánjâč á ny̤imi̤č
the small child’s eye: l̤éŋ b̤ōč jâ
the tall man’s sister: k̤ái jâ̤á̤l b̤ō-m̤usú
the small baby-snake: ny̤imi̤č-l̤éŋ b̤ōč

Problem #4. In compound nouns the left-hand part modifies the right-hand one. A noun gets the ending -tl/li unless it has one of the suffixes -capil (dimin.), -huah ‘one who has . . .’, -tlah/lah ‘place of many . . .’, or -tzintli ‘revered . . . ’ (-li and -lah after l, otherwise -tl and -tlah).

(a) a-cal-huah canoe owner (a-cal-li canoe, “water house”)
a-chi̤l-li water pepper
a-tl water
cal-lah village
cal-huah master of house
chil-a-tl chili water
chil-li chili
col-li grandfather/ancestor
col-tzintli revered grandfather/ancestor
cone-huah mother, “one who has child(ren)”
cone-huah-capil mum(my)
cone-tl child
oquich-cone-tl boy, male child
oquich-huah wife, “one who has a husband”
oquich-totol-tzintli revered turkey-cock
te-huah possessor of stones
te-tlah stony ground
totol-te-tl turkey egg

(b) house: calli stone: tetl
tele-tl Howler monkey: oquichtzintli
revered man/husband: oquichtzintli

(c) cacahua-tl: cocoa
a-cacahua-a-tl: cocoa drink
Cacahua-te-tl: cocoa bean
Cacahua-huah: possessor of cocoa
The pattern of As and Bs on the left gives the sub-code. Each pattern starts with A (this indicates that the barcode is the right way up, otherwise it would start with B, the mirror image of R) and contains exactly three As. The problem features all possible patterns except AABABB (subcode 1).

Only barcodes for meat, cheese, etc., which have random weights have the price included as part of the barcode (for the rest, the price is looked up from the store’s computer system). These are produced in-store (subcode 2) and so do not have a standard layout, but in the two that are given in the problem the last four digits before the checksum are the price (pork steak: 0416 → 4 euros and 16 cents).

(a) 1. (E);
2. G, checksum = 2;
3. C;
4. D;
5. A, Germany;
6. I;
7. H, cost = 4 euros and 74 cents;
8. B, full code = 7-317442-030049;
9. F.

(b) [Barcode image]

(c) This barcode is upside down (it starts with a B, not with an A), so it must be turned over and written backwards.

Norway = 70, full code = 7-022070-000035.