(a) \( \{PQS, QRS, PRS, PAT, QRT, PTR\} \)

Surface (a sphere)

(b) Not a surface: PT occurs in three triangles: PAT, PRT, PST.

(c) \( \{PQR, QRS, RST, PST, PAT, TRU, QTU, QSU, PSU, PRU\} \)

\( \text{Surface (RP}^2\) \)

(d) \( \{PQS, TUV, QRS, TVW, PAR, PWR, PRS, UUV\} \)

Surface (Two spheres)

(e) \( \{PQR, PRS, PQS, PUV, PTU, PTV, SUV, QSV, QTV, QRT, RTU, RSU\} \)

Not a surface: no cyclic ordering at vertex P

\( \{PQR, PRS, PQS\} - \text{one cycle} \)

\( \{PUV, PTU, PTV\} - \text{another} \)

(f) Since the author told us that exactly 5 are surfaces, and we have already found two non-surfaces, this and (g) must be surfaces.

(g) \( \{S\} \)

All triangles from \( \{P, R, S\} \) form a sphere. Yes, this is a surface.

All triangles from \( \{P, R, S, T\} \) do not form a surface: the edge PA lies in more than two triangles: PQR, PAS, PAT.