1. 1. “A constitution cannot exist without”  
   (A) citizens; passports  
   (B) legislature; sessions  
   (C) sovereignty; state  
   (D) amendments; referendums
2. 2. “A shadow cannot exist without”  
   (A) light; obstruction  
   (B) darkness; eclipse  
   (C) prism; spectrum  
   (D) night; moonlight
3. 3. “An angle at the center cannot be defined without”  
   (A) triangle; altitude  
   (B) radius; circle  
   (C) chord; tangent  
   (D) secant; ellipse
4. 4. “A derivative at a point cannot exist without”  
   (A) continuity; neighborhood  
   (B) integrability; area  
   (C) concavity; inflection  
   (D) monotonicity; bound
5. 5. “A legal contract cannot exist without”  
   (A) stamp; registry  
   (B) offer; acceptance  
   (C) fee; notarization  
   (D) court; verdict
6. 6. “A right triangle’s hypotenuse cannot exist without”  
   (A) perpendicular; base  
   (B) radius; circumference  
   (C) median; centroid  
   (D) bisector; arc
7. 7. “A market equilibrium price cannot exist without”  
   (A) taxation; subsidy  
   (B) supply; demand  
   (C) profit; loss  
   (D) import; export
8. 8. “A valid probability distribution cannot exist without”  
   (A) variance; mean  
   (B) independence; stationarity  
   (C) nonnegativity; normalization  
   (D) sampling; estimation
9. 9. “A chemical salt cannot exist (as defined) without”  
   (A) oxidizer; catalyst  
   (B) acid; base reaction  
   (C) solvent; solute  
   (D) buffer; indicator

10. “A spanning tree of a connected graph cannot exist without”  
(A) cycle; chord  
(B) root; height  
(C) connectivity; vertices  
(D) degree; diameter