1. Since the distance from $B$ to $C$ is 21 km and the distance from $C$ to $D$ is 19 km, then the distance from $B$ to $D$ is $21 \text{ km} + 19 \text{ km} = 40 \text{ km}$.
   Since the distance from $A$ to $B$ is 27 km and the distance from $B$ to $D$ is 40 km, then the distance from $A$ to $D$ is $27 \text{ km} + 40 \text{ km} = 67 \text{ km}$.

   $A$  
   27  $B$  
   48  21  $C$  
   67  40  19  $D$

2. (a) Since the distance from $P$ to $S$ is 48 km and the distance from $P$ to $R$ is 29 km, then the distance from $R$ to $S$ is $48 \text{ km} - 29 \text{ km} = 19 \text{ km}$.
   (b) Since the distance from $Q$ to $S$ is 31 km and the distance from $R$ to $S$ is 19 km, then the distance from $Q$ to $R$ is $31 \text{ km} - 19 \text{ km} = 12 \text{ km}$.
   (c) Since the distance from $P$ to $R$ is 29 km and the distance from $R$ to $T$ is 29 km, then the distance from $P$ to $T$ is $29 \text{ km} + 29 \text{ km} = 58 \text{ km}$.
   (d) Since the distance from $P$ to $R$ is 29 km and the distance from $Q$ to $R$ is 12 km, then the distance from $P$ to $Q$ is $29 \text{ km} - 12 \text{ km} = 17 \text{ km}$.

   Since the distance from $P$ to $T$ is 58 km and the distance from $P$ to $Q$ is 12 km, then the distance from $Q$ to $T$ is $58 \text{ km} - 17 \text{ km} = 41 \text{ km}$.
   Finally, the distance from $S$ to $T$ is 10 km. Can you see why?

   $P$  
   17  $Q$  
   29  12  $R$  
   48  31  19  $S$  
   58  41  29  10  $T$

3. The distance from $U$ to $Y$ equals the distance from $U$ to $V$ plus the distance from $V$ to $Y$.
   This means that the distance from $U$ to $Y$ equals $28 \text{ km} + 200 \text{ km} = 228 \text{ km}$.
   The distance from $U$ to $Y$ also equals the distance from $U$ to $W$ plus the distance from $W$ to $Y$.
   This means that the distance from $U$ to $Y$ equals $102 \text{ km} + 125 \text{ km} = 227 \text{ km}$.
   We got two different answers for the distance from $U$ to $Y$. This cannot be the case, so there must be a mistake in the four distances given.