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Problem:
Four people need to cross a bridge at night.

Their crossing times are:
Person A: 1 minute
Person B: 2 minutes
Person C: 7 minutes
Person D: 10 minutes

Only two people can cross at a time, and they must carry one torch.
When two people cross, they walk at the slower person's speed.

Goal:
Get everyone across the bridge in the least total time.

Best Way to Do It (Total Time: 17 minutes):
1.Person A and B cross → 2 minutes
2.Person A comes back → 1 minute
3.Person C and D cross → 10 minutes
4.Person B comes back → 2 minutes
5.Person A and B cross again → 2 minutes

Total Time:
2 + 1 + 10 + 2 + 2 = 17 minutes

so,Everyone is across the bridge safely in 17 minutes,
which is the shortest possible time.
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