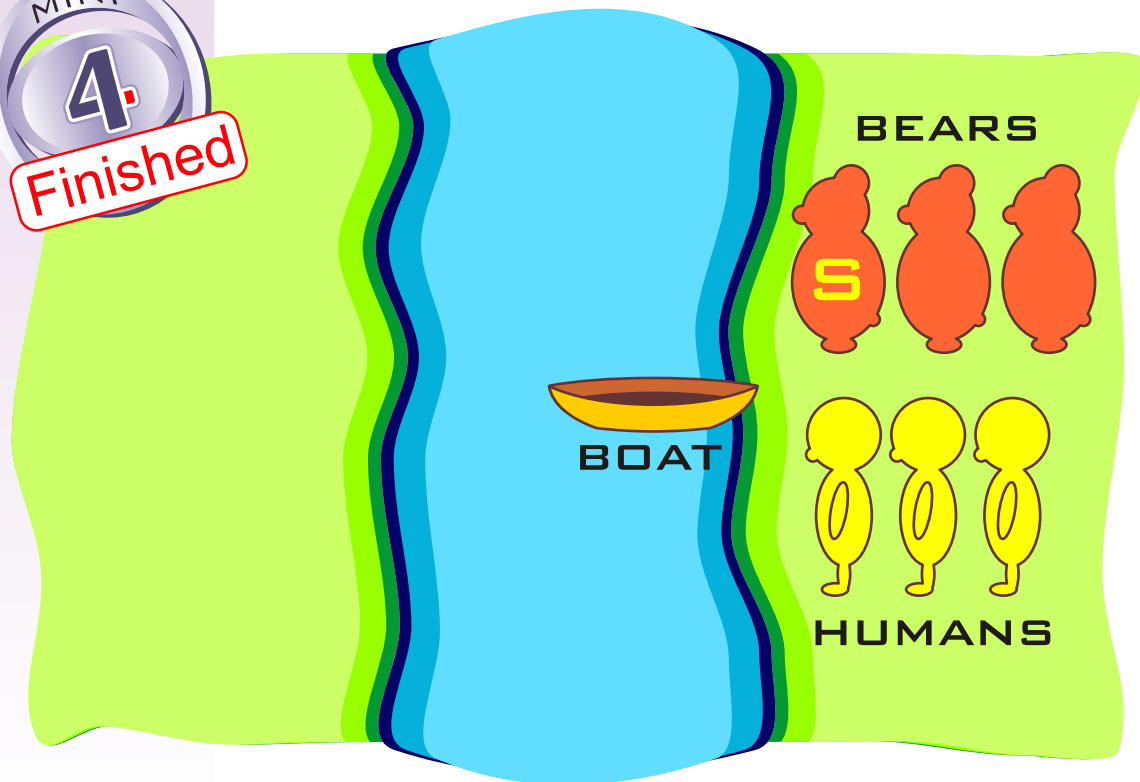


Hints, Advice
and Info

Mini-Contests



Bears & People*

You have three bears and three humans. The bears and humans have to take a boat from one island to another island. One bear is a special bear who can drive the boat. The boat can hold no more than two - 2 bears, or 2 humans, or 1 bear plus 1 human. There can never be more bears than humans on either island or the human will be killed. How can this be done?

P.

* This puzzle is derived from the old class of puzzles with river crossing...

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Mini-Contests

Bears & People (solution)

To take the whole company over the river you need to make 13 rides (see solutions below).

This puzzle wasn't as easy as it might seem at first sight. So we've received some wrong solutions as well. The main mistake of them was that on one of the two islands there were situations with more bears than humans at the same time (of course, the special bear is a bear too). This isn't acceptable as in the description we can read: *"There can never be more bears than humans on either island or the human will be killed."* Bear in mind that when a bear (or human) comes to an island he has to be counted as one more bear (or human) on that island even if he still is sitting in the boat.

Also we've got some solutions where more than one bear can row. This was a wrong assumption since the description says: *"One bear is a special bear who can drive the boat."*

Also we've received a funny answer like this:
"The special driver and another bear can go over on the boat while the humans swim to the other island. Then one bear can go back with the boat and get the other bear."

Above we show some of the winning solutions.

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Solution by Husnu Sincar

Step Island A Boat Island B

1 2 Bears 2 Human == 1 Bear 1 Human > ==

2 2 Bears 2 Human == < 1 Human == 1 Bear

3 3 Human == 1 Bear 1 Bear (S) > == 1 Bear

4 3 Human == < 1 Bear (S) == 2 Bear

5 1 Human 1 Bear (S) == 2 Human > == 2 Bear

6 1 Human 1 Bear (S) == < 1 Human 1 Bear == 1 Human
1 Bear

7 1 Human 1 Bear == 1 Human 1 Bear (S) > == 1 Human
1 Bear

8 1 Human 1 Bear == < 1 Human 1 Bear == 1 Human 1
Bear (S)

9 2 Bear == 2 Human > == 1 Human 1 Bear (S)

10 2 Bear == < 1 Bear (S) == 3 Human

11 1 Bear == 1 Bear 1 Bear (S) > == 3 Human

12 1 Bear == < 1 Bear (S) == 3 Human 1 Bear

13 - == 1 Bear 1 Bear (S) > == 3 Human 1 Bear

Solution by Nicole Takahashi

This is a solution to the Humans and Bears problem. I would like to point out that I refer to the islands as Island 1 = the island everyone starts on and Island 2 = the destination island. Also, unless specified as the Special Bear I mean a Non-special Bear.

1) 1 Human and 1 Bear cross.

Status Island 1: 2 Humans, 1 Bear, 1 Special Bear

Status Island 2: 1 Human, 1 Bear

2) 1 Human crosses back.

Island 1: 3 Humans, 1 Bear, 1 Special Bear

Island 2: 1 Bear

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- 3) 1 Bear and 1 Special Bear cross.
Island 1: 3 Humans
Island 2: 2 Bears, 1 Special Bear
- 4) 1 Special Bear crosses back.
Island 1: 3 Humans, 1 Special Bear
Island 2: 2 Bears
- 5) 2 Humans cross.
Island 1: 1 Human, 1 Special Bear
Island 2: 2 Humans, 2 Bears
- 6) 1 Human and 1 Bear cross back.
Island 1: 2 Humans, 1 Bear, 1 Special Bear
Island 2: 1 Human, 1 Bear
- 7) 1 Human and 1 Special Bear cross.
Island 1: 1 Human, 1 Bear
Island 2: 2 Humans, 1 Bear, 1 Special Bear
- 8) 1 Human and 1 Bear cross back.
Island 1: 2 Humans, 2 Bears
Island 2: 1 Human, 1 Special Bear
- 9) 2 Humans cross.
Island 1: 2 Bears
Island 2: 3 Humans, 1 Special Bear
- 10) 1 Special Bear crosses back.
Island 1: 2 Bears, 1 Special Bear
Island 2: 3 Humans
- 11) 1 Special Bear and 1 Bear cross.
Island 1: 1 Bear
Island 2: 3 Humans, 1 Bear, 1 Special Bear

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12) 1 Special Bear crosses back.

Island 1: 1 Bear, 1 Special Bear

Island 2: 3 Humans, 1 Bear

13) 1 Special Bear and 1 Bear cross.

Island 1: Nobody

Island 2: 3 Humans, 2 Bears, 1 Special Bear

Thank you :)

Solution by Xiner

The solution is as follows:

3 humans denote as H, special bear denote as S and the other 2 bears denote as B. (SBBHHH=)

S and B go over to another island. (BH HH = SB)

S rolls back alone.(SBHHH=B)

S and another B go over to the island.(HHH=SBB)

S rolls back alone again.(SHHH=BB)

2H roll over to the island. (SH=BBHH)

One B and H come back together.(SBHH=BH)

S and H roll over to another island.(BH=SBHH)

One B and H come back again.(BBHH=SH)

2 H roll over to the island.(BB=SHHH)

S comes back alone.(SBB=HHH)

S fetches B over to the island.(B=SBHHH)

S comes back alone again to fetch the last B to go over. (SB=BHHH) then (=SBBHHH).

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Solution by Marie Sabbe

A normal bear and a human cross. The human returns. The other normal bear and the special bear cross, and the special bear returns. Two humans cross, and a human and a bear return. A human and the special bear cross, and the human returns with a normal bear. The two humans cross, and the special bear returns. The special bear and a normal bear cross, and the special bear returns. The special bear crosses with the last normal bear.

Thanks

Solution by Katherine Cardiff

1) The Special Bear takes a bear to Island B (Island A: 3H, 1B; Island B: 0H, 2B incl. Special B) and the special bear returns to Island A alone. (Island A: 3H, 2B incl. SB; Island B: 0H, 1B)

2) The special Bear takes the other bear to Island B (Island A: 3H, 0B; Island B: 0H, 3B incl. SB) and the special bear returns to Island A alone. (Island A: 3H, 1B incl. SB; Island B: 0H, 2B)

3) Two humans go to Island B (Island A: 1H, 1B incl. SB; Island B: 2H, 2B) and a human returns to the other island with a normal bear. (Island A: 2H, 2B incl. SB; Island B: 1H, 1B)

4) A human and the special bear go to Island B (Island A: 1H, 1B; Island B: 2H, 2B incl. SB) and the human returns with a normal bear. (Island A: 2H, 2B; Island B: 1H, 1B incl. SB)

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5) Two humans go to Island B (Island A: 0H, 2B; Island B: 3H, 1B incl. SB)
and the special bear returns to Island A alone.
(Island A: 0H, 3B incl. SB; Island B: 3H, 0B)

6) The special bear crosses with a normal bear (Island A: 0H, 1B; Island B: 3H, 2B incl. SB)
and the special bear returns to Island A alone.
(Island A: 0H, 2B incl. SB; Island B: 3H, 1B)

7) The special bear takes the last bear to Island B (Island A: 0H, 0B; Island B: 3H, 3B incl. SB)
and all the humans and bears are safe on Island B.