



Puzzles!

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5. The 4 red chips and the 4 blue chips in the diagram below have to change positions. The red chips can only move right and the blue chips can only move left. A chip can either move into an adjacent empty square, or can jump **one** chip of the **opposite** color. Can it be done?



6. *The Census Taker* — A Play in One Act (by Paul Zeitz)

The CENSUS TAKER approaches the WOMAN's home and rings the doorbell.

CENSUS TAKER: Hi, I'm with the Census Bureau.

WOMAN: Hi. What can I do for you?

CT: I'm collecting some information. How many children do you have? What are their ages?

W: I have 3 daughters, their ages are whole numbers, and the product of their ages is 36.

CT: (looking confused) That's not enough information for me to determine their ages.

W: I could tell you the sum of their ages, but you'd still be stumped.

CT: (looking frustrated) I wish you'd tell me something more.

W: (thinking for a moment) Well, my oldest daughter Annie likes dogs.

End scene

What are the ages of the three daughters?

7. The Dragon of Ignorance has 3 heads and 3 tails. You can slay it with the Sword of Knowledge, by chopping off all its heads and tails. You can chop off 1 or 2 heads or 1 or 2 tails with each stroke. However: if you chop off 1 head, a new one grows in its place; if you chop off 1 tail, *two* new tails grow in its place, and if you chop off 2 tails, a new head grows. (If you chop off 2 heads, nothing grows back.) How many chops do you need to slay the dragon?
8. You have four gold coins, that are labeled 1 ounce, 2 ounces, 3 ounces, and 5 ounces. However, one is fake and does not weigh the correct amount (it might be heavier or lighter). Using only two weighings on a balance scale, determine which one is fake.