We have 10 identical bottles of identical pills (each bottle contains 100 of pills). Out of 10 bottles 9 have 1 gram of pills but 1 bottle has pills of weight of 1.1 gram. Given a measurement scale, how would you find the heavy bottle? You can use the scale only once.

Answer:

First, arrange the bottles on shelf and now take, 1 pill from the first bottle, 2 pills from the second bottle, 3 pills from the third bottle, and so on. Ideally you would have **(10)*(11)/2=55** pills weighing 55 grams, when you put the entire pile of pills on the weighing scale. The deviation from 55 g would tell you which bottle contains the heavy pills.

If it is .1 gram more, it is 1st bottle which has heavy pill, if it is .2 more, gram 2nd bottle has heavy pills, if it is .3 more, gram 3rd bottle has heavy pills.

How to measure exactly 4 gallons of water from 3 gallon and 5-gallon jars, Given, you have unlimited water supply from a running tap.

Solution:

Step 1. Fill 3-gallon jar with water. (5p – 0, 3p – 3)

Step 2. Pour all its water into 5-gallon jar. (5p – 3, 3p – 0)

Step 3. Fill 3-gallon jar again. (5p – 3, 3p – 3)

Step 4. Pour its water into 5-gallon jar until it is full. Now you will have exactly 1-gallon water remaining in 3-gallon jar. (5p – 5, 3p – 1)

Step 5. Empty 5-gallon jar, pour 1-gallon water from 3 gallon jar into it. Now 5-gallon jar has exactly 1 gallon of water. (5p – 1, 3p – 0)

Step 6. Fill 3-gallon jar again and pour all its water into 5-gallon jar**,** thus 5-gallon jar will have exactly 4 gallons of water. (5p – 4, 3p – 0)

You've got someone working for you for seven days and a gold bar to pay him. The gold bar is segmented into seven connected pieces. You must give them a piece of gold at the end of every day. What and where are the fewest number of cuts to the bar of gold that will allow you to pay him 1/7th each day?

Puzzle Solution:

Lets split the chain as,

Day 1: Give A (+1)

Day 2: Get back A, give B (-1, +2)

Day 3: Give A (+1)

Day 4:Get back A and B, give C (-2,-1,+4)

Day 5:Give A (+1)

Day 6:Get back A, give B (-1,+2)

Day 7:Give A (+1)

Puzzle: Four people need to cross a rickety bridge at night. Unfortunately, they have only one torch and the bridge is too dangerous to cross without one. The bridge is only strong enough to support two people at a time. Not all people take the same time to cross the bridge. **Times for each person: 1 min, 2 mins, 7 mins and 10 mins.** What is the shortest time needed for all four

It is 17 mins.

1 and 2 go first, then 1 comes back. Then 7 and 10 go and 2 comes back. Then 1 and 2 go again, it makes a total of 17 minutes.