**Which reindeer should Santa choose?**

Santa needs to select the 6 strongest, fittest reindeer to pull the sleigh on Christmas Eve. But how does he choose?

**Test 1 – measuring lung capacity**

The more air your lungs can hold, the harder you can work with each breath. Santa has two ways he can measure lung capacity with his reindeer.

|  |  |
| --- | --- |
| **The balloon test**  How many breaths does it take to blow up a balloon? The reindeer with the least breaths has the largest lung capacity. | http://www.usnews.com/cmsmedia/47/4cd41cf02fcc839011f3c6d52f5709/34324FE_DA_Balloon_102912.jpg |
| **The volume bag**  How many litres of air does each reindeer’s lungs hold? | http://prolabscientific.com/images/P/H-6050.jpg |

Your job is to trial each method, and say which will give Santa better data, and why.

**Test 2 – resting pulse rate**

The quicker that your pulse returns to normal after exercise, the fitter you are. Trial Santa’s method for him.

|  |  |
| --- | --- |
| **Resting pulse rate test.**   1. Sit down and take your pulse for 30 seconds. Record the result. 2. Dance to a Christmas song – throw in some funky moves. The song should last at least 2 minutes. 3. Now sit down and start measuring your pulse. Keep writing down the figure every 30 seconds, starting at 0 each time, until it is the same as before. 4. Work how many minutes it took to return to normal. | http://projectplans.houseplansandmore.com/002D/002D-9032/002D-9032-front-main-8.jpg |

**The results**

These are the results Santa collected.

Which reindeer should he choose, and why?

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Dasher | Dancer | Prancer | Vixen | Comet | Cupid | Donner | Blitzen | Rudolf |
| Lung capacity (l) | 6.5 | 3.2 | 5.7 | 4.5 | 4.5 | 5.9 | 5.2 | 4.2 | 5.7 |
| Resting pulse rate (min) | 1 | 3.0 | 1.5 | 2.0 | 2.5 | 1 | 2.0 | 2.5 | 1.5 |

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