

Algorithm Non-example

Narrator:

To solve this problem, a student may use a guess-and-check approach. This is not a standardized approach to determining a solution. A guess-and-check strategy is a non-example of an algorithm.

Student:

Hmm, I think I will guess and check to solve this problem. There are 10 heads, which means 10 animals. I need to try different combinations of numbers that add together to equal 10.

Narrator:

While the student is calculating to check his or her guess, the student is not applying an algorithm to the solution strategy for this problem. We will continue to listen to the student's thinking to illustrate the use of the guess-and-check strategy.

Student:

I think I will start with three pigs and seven chickens. Pigs have four legs each, so three pigs would have 12 legs. Chickens have two legs each, so seven chickens would have 14 legs. Since $12 + 14 = 26$, and I need 32 legs, I need more pigs and fewer chickens.

Student:

Now, I will try five pigs and five chickens. Five pigs would have 20 legs, and five chickens would have 10 legs. Since $20 + 10 = 30$, my number of legs is still too few. I need more pigs.

Student:

Since five pigs and five chickens got me close to 32 legs, I think I will try six pigs and four chickens. Six pigs gives me 24 legs, and four chickens gives me eight legs. Since $24 + 8 = 32$, I know there are six pigs and four chickens.