

Show your method of solving clearly and state your answer in a complete sentence.

1. A worm is at the bottom of a 12-foot well. Every day it crawls up 3 feet, but at night it slips down 2 feet. How many days does it take the worm to get to the top of the well?

2. Rob is shopping in a large department store with many floors. He enters the store on the middle floor from a skyway, and immediately goes to the credit department. After making sure his credit is good, he goes up three floors to the housewares department. Then he goes down five floors to the children's department. Then he goes up six floors to the TV department. Finally, he goes down ten floors to the main entrance of the store, which is on the first floor. How many floors does the department store have?

3. A ball rebounds one-half the height from which it is dropped. The ball is dropped from a height of 160 feet and keeps on bouncing. What is the total vertical distance the ball will travel from the moment it is dropped to the moment it hits the floor for the fifth time?

4. Joanne sets up her Ninja Turtles in a big circle with each turtle spaced an equal distance from its neighbors. She then proceeds to count them in order around the circle. Unfortunately, she loses track of where she started before she finishes counting. But she realizes she can still figure out how many turtles are in the circle by noticing that the sixth turtle is directly opposite the seventeenth turtle. How many Ninja Turtles are in the circle?

5. Somewhere in the Mojave Desert, the army set up training camps named Arachnid, Feline, Canine, Lupine, Bovine, and Thirty-nine. Arachnid is 15 miles from Canine. Bovine is 12 miles from Lupine. Feline is 6 miles from Thirty-nine. Lupine is 3 miles from Canine. Bovine is 9 miles from Thirty-nine. Bovine is 7 miles from Canine. Thirty-nine is 1 mile from Arachnid. Feline is 11 miles from Lupine. No other pairs are connected by roads. What is the shortest route from...

a) Feline to Bovine?

b) Canine to Feline?

c) Lupine to Bovine?

d) Canine to Thirty-nine?

6. Betty, Cathy, Isabel, Lani, Alma, and Ursula ran an 800-meter race. Alma beat Isabel by 7 meters. Betty finished 12 meters behind Ursula. Alma finished 5 meters ahead of Lani, but 3 meters behind Ursula. Cathy finished halfway between the first and last person. In what order did they finish? Indicate the order and the distances between each girl.