

Diana and Actaeon – Mathematical Observations



I have been taking a look at angles in this painting – specifically the angles of the body parts of the main two characters – Diana and Actaeon; I measured the angles of various body parts of the pair, and recorded my findings in a table. Here it is:

Character Name	Angle of bent joint in most visible arm (degrees)	Angle of bent joint in most visible leg (degrees)	Angle of bent joint in left foot (degrees)	Angle of bent joint in right foot (degrees)	Angle between two legs (degrees)
Diana	103	85	132	118	34
Actaeon	90	150	99	118	43

I made some interesting findings, especially, as you may well have noticed, the fact that the angle of the bent joint in both Diana and Actaeon's right foot was 118 degrees, the biggest angle in Diana's body, but only the second biggest in Actaeon's, runner-up to the angle of the bent joint in his most visible (right) leg. Another intriguing finding I made was the fact that the angle of the bent joint in

Actaeon's most visible (right) arm was an exact right angle (90 degrees). There were only 7 degrees between the angle between Diana and Actaeon's legs, 13 degrees between the angle of the bent joint in their most visible arms, and the angle of the bent joint in Actaeon's most visible (right) leg was only 20 degrees short of being double that of Diana's most visible (left) leg. Diana had three angles in her body that were over 100 degrees, but Actaeon only had two, coming very close with the angle of the bent joint in his left foot (99 degrees). The difference between the biggest angle in Actaeon's body (bent joint in most visible [right] leg – 150 degrees) and the smallest angle in Actaeon's body (between two legs – 43 degrees) was 107 degrees. The difference between the biggest angle in Diana's body (bent joint in left foot – 132 degrees) and the smallest angle in Diana's body (between two legs – 34 degrees) was 98 degrees. The difference between the angle of the bent joint in Actaeon's most visible (right) arm (90 degrees) and the angle of the bent joint in his left foot (99 degrees) was fairly small (9 degrees). A fairly interesting pattern in the angles of Diana's body is that there are 14 degrees between the biggest and second biggest angle (bent joint in left foot and bent joint in right foot – 132 and 118 degrees respectively), 15 degrees between the second and third biggest angles (the third being the bent joint in her most visible [left] arm – 103 degrees) and 18 degrees between the third biggest and fourth biggest angle (the fourth biggest being the bent joint in her most visible [leg] leg – 85 degrees). These three numbers are ascending by one on two out of three occasions, and come very close to doing so on the other occasion, making the pattern fairly consistent. Finally, the last thing I noticed is that when you add up all the angles I measured on Actaeon's body, it makes 500 degrees exactly. Diana's cumulative angle count is not far off 500 either, as all her body angles add up to 472 degrees.

Year 7 Pupil