Planet Actual and Predicted Distances and Orbital Periods

A	B	C = B^3	D	E = D^2	F = E/C	G	H	I = H/10	J = | B – I|
Planet	Actual distance a from Sun in AU	a^3 in AU^3	Orbital period P in years	P^2 in $years^2$	P^2/a^3	Bode's sequence	G + 4	Bode's predicted distance in AU	Difference between predicted and actual
Mercury	0.3871	0.058	0.2408	0.06	1.00	0	4	0.4	0.0129
Venus	0.7233	0.378	0.6151	0.38	1.00	3	7	0.7	0.0233
Earth	1	1	1	1.00	1.00	6	10	1	0
Mars	1.5237	3.538	1.8808	3.54	1.00	12	16	1.6	0.0763
Jupiter	5.2028	140.8	11.867	141	1.00	48	52	5.2	0.0028
Saturn	9.5388	867.9	29.461	868	1.00	96	100	10	0.4612
Uranus	19.18	7056	84.013	7,058	1.00	192	196	19.6	0.42
Neptune	30.0611	27165	164.793	27,157	1.00	384	388	38.8	8.7389

Lab Discussion Question 2.

$P^2 = a^3$ $300^2 = a^3$ $90{,}000 = a^3$ $\sqrt[3]{90{,}000} = 44.81$ AU

Lab Discussion Question 3.

$P^2 = a^3$ $P^2 = 60^3$ $P^2 = 216{,}000$ $\sqrt{216{,}000} = 464.76$ years