Calculating with **Time** Answers

If each planet starts 1 rotation on 1st September 2015 at 9:00am can you work out when each planet rotation will end? Write down the correct time and date.

Planet	1 Rotation	End Time and Date
Mars ★	24 hours 37 minutes	2nd September 9.37am
Mercury ★★	59 days	30th October 9.00am
Venus ★★★	243 days	1st May 9:00am
Neptune ★	16 hours 17 minutes	2nd September 1:17am
Earth ★	23 hours 56 minutes	2nd September 8:56am
Uranus ★★★	17 hours 12 minutes	2nd September 2:12am
Jupiter ★	9 hours 55 minutes	1st September 6:55pm
Saturn ★	10 hours 13 minutes	1st September 7:13pm

Mental **Arithmetic** Answers

Adding and Subtracting Positive and Negative Numbers

Show how the Average Temperatures Change with the Different Increases and Decreases in temperature.

Planet	Average Temperature (°c)	Increased by 2° (c)	Decreased by 5° (c)	Increased by 11° (c)	Decreased by 13° (c)
Mars	−55	−53	−58	−47	−60
Mercury	167	169	164	175	162
Venus	449	451	446	457	444
Neptune	−223	−221	−226	−215	−2.2
Earth	7.2	9.2	4.2	15.2	2.2
Uranus	−184	−182	−187	−176	−189
Jupiter	−153	−151	−156	−145	−158

Mental **Arithmetic** Answers

Adding and Subtracting Positive and Negative Numbers

Show how the Average Temperatures Change with the Different Increases and Decreases in temperature.

Planet	Average Temp. (°c)	Increased by 17° (c)	Decreased by 24° (c)	Increased by 33° (c)	Decreased by 106° (c)
Mars	−55	−38	−62	−29	−135
Mercury	167	184	160	193	87
Venus	449	466	442	475	369
Neptune	−223	−206	−230	−197	−303
Earth	7.2	24.2	0.2	33.2	−72.8
Uranus	−184	−167	−191	−158	−264
Jupiter	−153	−136	−112	−79	−185

Circle and Sphere **Calculations** Answers

Planet	Diameter (km)	Radius (km)	Circumference (km)
Mars	6 794	3 397	21 343.98
Mercury	4 876	2 438	15 318.41
Venus	12 107	6 053.5	38 035.26
Neptune	49 527	24 763.5	155 593.66
Earth	12 775	6 377.5	40 071.01
Uranus	51 117	25 558.5	160 588.79

Circle and Sphere **Calculations** Answers

Planet	Diameter (km)	Circumference (km)	Surface Area (km^2)	Surface Area rounded to nearest 100 000 (km^2)	Surface Area Standard Form (km^2)
Mars	6 794	21 343.98	145 011 003.4	145 000 000	1.45×10^8
Mercury	4 876	15 318.41	74 962 546.58	74 700 000	7.47×10^7
Venus	12 107	38 035.26	460 416 852.8	460 400 000	4.604×10^8
Neptune	49 527	155 593.66	7 706 087 167	7 706 100 000	7.7061×10^9
Earth	12 775	40 071.01	511 105 787.4	511 100 000	5.111×10^8
Uranus	51 117	160 588.79	8 208 817 264	8 208 800 000	8.2088×10^9