**Solar System – scientific notation and multiplication math problems**

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| |  |  | | --- | --- | | 1. | It takes Jupiter forty-one hundredths of an Earth day for a complete rotation and four thousand, three hundred twenty-nine Earth days for a complete revolution. Rebecca is sixty-four Earth years old. If Rebecca had lived on Jupiter, how many years old would she be (to the nearest tenth)? | | |  |  | | --- | --- | | 2. | The mass of Venus is 4.87 x 1024 kg. The mass of Saturn is 5.68 x 1026 kg. How much larger is the mass of Saturn in scientific notation? | |
| |  |  | | --- | --- | | 3. | Jordan estimated the radius of Venus to be 3308 miles. The real diameter of Venus is 7519 miles. How close was Jordan's estimate, as a percent of Venus' real diameter? | | |  |  | | --- | --- | | 4. | The ratio of the diameter of an asteroid to the diameter of Pluto is 34 to 143. The diameter of Pluto is 1.43 x 103 miles. What is the diameter of the asteroid? | |
| |  |  | | --- | --- | | 5. | James weighs forty-three kilograms on Earth and thirty-nine kilograms on Venus. Steven weighs seventy-two kilograms on Earth. How much would Steven weigh on Venus? | | |  |  | | --- | --- | | 6. | On average, Neptune is 4,504,000,000 kilometers from the sun. Venus is on average only 108,000,000 kilometers from the sun. On average and in scientific notation, how much further is Neptune from the sun? | |

**Solar System – addition and subtraction math problems**

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| |  |  | | --- | --- | | 1. | The composition of Pluto is not yet known. Sean estimates that Pluto is a mixture of twenty-nine percent rock and the rest of the planet is made of water. What percent of Pluto does Sean estimate to be water? | | |  |  | | --- | --- | | 2. | It takes Mars six hundred eighty-six and two tenths Earth days to orbit the sun. How much quicker is Earth's revolution? | |
| |  |  | | --- | --- | | 3. | It takes Mercury fifty-eight and six tenths Earth days for a complete rotation and eighty-eight Earth days for a complete revolution. How does Mercury's time for a complete rotation compare to that of Earth's? | | |  |  | | --- | --- | | 4. | Uranus is two thousand, eight hundred seventy-five million kilometers from the sun, and Venus is one hundred eight million kilometers from the sun. How much further from the sun is Venus? | |
| |  |  | | --- | --- | | 5. | Destiny is an astronomer. She estimated that during Mercury's day, the planet reached a high temperature of seven hundred eighty-one degrees Fahrenheit. Destiny estimated that during the night, the temperature dropped one thousand, sixty-seven degrees Fahrenheit from the high temperature. What was Destiny's estimate for the low temperature? | | |  |  | | --- | --- | | 6. | Pluto's radius is about 715 miles. Neptune's diameter is about 15,270 miles. The diameter of Pluto is how much smaller than Neptune's diameter? | |

**Solar System – rounding math problems**

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| |  |  | | --- | --- | | 1. | Uranus made a complete rotation from 4:53 a.m. to 10:09 p.m. To the nearest hour, how long is Uranus' rotation? | | |  |  | | --- | --- | | 2. | It takes Neptune sixty-seven hundredths Earth days for a complete rotation and zero hundred sixty thousand, one hundred forty-eight Earth days for a complete revolution. How many days, rounded to the nearest ten days, does it take Neptune to make a complete orbit around the sun? | |
| |  |  | | --- | --- | | 3. | Saturn's average distance from the sun is one thousand, four hundred twenty-nine million kilometers. What is Saturn's average distance from the sun rounded to the nearest ten million kilometers? | | |  |  | | --- | --- | | 4. | The diameter of Saturn is seventy-four thousand, nine hundred seventy-seven miles. What is the diameter of Saturn rounded to the nearest ten thousand miles? | |
| |  |  | | --- | --- | | 5. | The diameter of Venus is seven thousand, five hundred nineteen miles. What is the diameter of Venus rounded to the nearest thousand miles? | | |  |  | | --- | --- | | 6. | The diameter of Mercury is three thousand, thirty-one miles. What is the diameter of Mercury rounded to the nearest hundred miles? | |

**Solar System – algebra math problems**

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| |  | | --- | | 1. The masses of two asteroids weigh 4.82 x 102 kilograms. The larger asteroid weighs sixty-six kilograms more than three times the weight of the smaller asteroid. What is the weight of the smaller asteroid? | | |  |  | | --- | --- | | 2. | It takes Jupiter forty-one hundredths Earth days for a complete rotation and four thousand, three hundred twenty-nine Earth days for a complete revolution. Noah's age on Jupiter would be seventy and five tenths years less than his Earth age. How old is Noah in Earth years? | |
| |  |  | | --- | --- | | 3. | Two comets are 7.8 x 104 kilometers apart. The first comet is traveling at 7.8 x 104 kilometers per hour. The other comet is heading in the opposite direction at 1.26 x 105 kilometers per hour. If the current time is 11:45 a.m., when will the comets be 1,200,000 kilometers apart? | | |  |  | | --- | --- | | 4. | Three times Morgan's Earth weight is one hundred sixty-six and three tenths kilograms more than her weight on Pluto. How much does Morgan weigh? | |
| 5. How long would last a journey from the Earth to the Sun in a car going at 100km/h? | 6. If the Earth was the size of a bottle cap, how many bottle caps would you need to make the Sun? |