

It's My Birthday - Answer Key

The different planets in our solar system take different amounts of **time** to travel around the **sun**. We know that the Earth, the **third** closest planet to the sun, makes one full trip or revolution around the sun every **365** days. This is equivalent to what we call one **year** on Earth. Mercury, the planet **closest** to the sun, makes one revolution every **88** days, while Jupiter, the **fifth** closest planet to the sun, completes a revolution every **12** years.

1) Determine how old you would be if you lived your whole life on Mercury.

a) Convert your age in years to days by multiplying your number of years by 365 and then adding the number of days since your last birthday. This will give you your age in days.

29 years and 7 months old - $29 \text{ years} \times 365 = 10,585$ $7 \text{ months} \times 30 = 210$ $10,585 + 210 = 10,795$ I am 10,795 days old.

b) One year on Mercury is **88** days. Divide the number of days old you are here on Earth by **88**.

$10,795 / 88 = 122.7$ years I would be 122.7 years old on Mercury.

2) Determine how old you would be if you lived your whole life on Jupiter.

**$12 \text{ years} \times 365 = 4380$ days $10,795 / 4380 = 2.5$ years
I would be 2.5 years old on Jupiter.**

3) Why do you think you were older on Mercury than on Jupiter? **I think I would be older on Mercury because it takes Mercury less time to orbit the Sun than Jupiter.**

4) Venus is the second closest planet to the Sun, and Mars is the fourth closest. On which planet do you think you would be older? Explain.

I would be older on Venus because it takes Venus less time to orbit the Sun.

5) Neptune revolves around the Sun approximately every 165 years. How old would you be if you lived your whole life on that planet?

**$165 \text{ years} \times 365 = 60,225$ days $10,795 / 60,225 = 0.18$ days
 $0.18 \times 24 \text{ hours} = 4.3$ hours I would be 4.3 hours old on Neptune.**

Mercury

Size: About 1/3 as wide as the Earth

Number of moons: 0

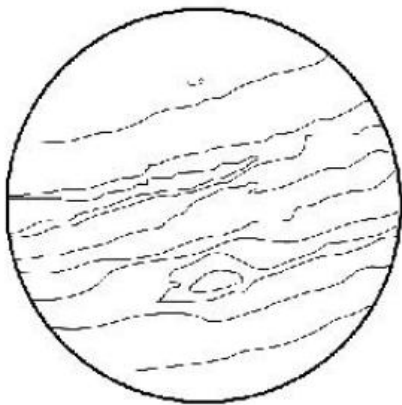
Temperature: -279 F to 800 F. So REALLY cold or REALLY hot depending on if you're in the shade or not!

Mercury is a ball of rock.



Mercury is the planet closest to the Sun. Its grey surface is covered with craters. It would not be very nice to live on Mercury, because it is either REALLY hot or REALLY cold.

Jupiter



Size: About 11 Earths across

Number of moons: 17

Temperature: -278 F. So Jupiter is REALLY cold!

Jupiter is mainly made of liquid and gas, with a small rocky core.

Jupiter is the fifth planet from the Sun. It is the biggest planet in the solar system. Jupiter is orange, red, yellow, brown, and white. Jupiter also has a Great Red Spot. You can draw the red spot on the picture.