

The Inner Planets (p. 696 - 701)

1 Day = 176 Earth Days
 Sun rises in East
 stops high in sky
 moves east stops +
 returns westward

I. Mercury Smaller than Titan + Ganymede

- Circle the letter of each sentence that is true about Mercury.
 - a. Mercury's surface has many craters.
 - b. Mercury has no moons.
 - c. The interior of mercury is composed mostly of the element mercury.
 - d. Mercury is the planet closest to the Sun. - Similar in size of the Moon

2. Mercury has cooled and contracted on the surface.

Circle One :

True

False

Scarps - Long cliffs
 Caused by planet contracting

3. Mercury has an iron-rich core. - (most iron rich planet in solar system)

Circle One :

True

False

Iron core = 42% planet volume
 Earth = 17% iron core

4. Why does Mercury have a greater range of temperatures than any other planet?

- It is very close to the Sun (800°F - -280°F)
- No atmosphere to retain heat (weak gravity → gases escape)

5. What is the Caloris Basin? (Not in the book.)

Site of meteor impact (810 miles in Diameter)
 → along terminator (surrounded by tall mountains)

II. Venus

1. Why is Venus sometimes called "Earth's Twin"?

Similar in size and mass
 (Diameter: Earth = 12,756 km, Venus = 12,104 km)

2. Circle the letter of the gas that makes up most of the atmosphere of Venus.

a. oxygen

b. nitrogen

c. sulfuric acid

d. carbon dioxide

Clouds (20 km thick, 48-68 km above)
 (Pressure = 90x greater than Earth) - sefv

3. Because Venus is often a bright object in the west after sunset, it is sometimes called the

Evening Star. (Morning Star)

4. The atmosphere of Venus is so thick that there is never a sunny day on its surface.

Circle One :

True

False

(20 km. thick haze above clouds)

5. The trapping of heat by the atmosphere of Venus is called the

Greenhouse Effect (900°F) → Day + Night!
 → Bone Dry surface!

No seasons
 0.5° tilt

Weak magnetic field →

(Collision in the past?)

Name _____

6. How is the rotation of Venus different from that of most other planets and moons?

Venus rotates east to west (opposite most planets)
(1 Day = 243 Earth Days, 1 year = 224 Earth Days)

7. Identify three geologic features of the Venusian surface. (Not in the book.)

- Volcanic Plains: (80% of surface)
- Highland Continents: (Ishtar Terra (North) ^{size of Australia}
Aphrodite Terra (south) size of 1/2 of Africa)
- Volcanoes: (1,600 active) → surface re-melts every 700 million years

Maxwell Montes:
(11 km. tall
Everest = 9 km)

III. Mars

1. Why is Mars called the "Red Planet"?

Presence of iron oxide in rocks + windstorms (erodes the surface)

2. What are the ice caps of Mars composed of?

Were once vast oceans →

Ice Water (90%) of Carbon dioxide (winter - large, but thin / summer - smaller)

3. Identify the two major geologic features of the Martian surface. (Not in the book.)

- Northern Lowlands: → (Vastitas Borealis) (site of most volcanoes including Olympus Mt.)
- Southern Highlands: → heavily cratered (site of Valles Marineris)

Valles Marineris:
- west canyon near equator
- 4,000 km long
- 4 miles deep
- 120 miles wide
- developed a crack

4. The largest volcano in the solar system is located on Mars.

Circle One :

True

False ←

Olympus Mons
- size of Missouri
- 3x taller than Everest

5. Why do some regions on Mars look darker than others?

Dust Devils →

Windstorms blow dust around (Darker = dust blown away)

6. The atmosphere on Mars is composed mostly of CO₂ (95%) (15% nitrogen) (oxygen)

7. Circle the letter of each sentence that is true about Mars.

- The rocks on Mars are covered with rusty dust.
- Mars has seasons because it is tilted on its axis (25.9° tilt)
- Mars has many large oceans on its surface.
- Mars has giant volcanoes on its surface. (hot spots; no current tectonic activity)

8. What are the two moons of Mars?

- Phobos "Fear" - inner - larger
- Deimos "panic" - smaller / less cratered

Temp. range:
70°F - -220°F