Name: _____ Group: _____ Date: _____

SPACE (ST)

STUDENT BOOK	Ch. 9, pp. 274–282

Scale of the Universe: astronomical unit, light year

1. Identify the appropriate unit of measurement for the distances below.

A. Astronomical unit	B. Light year

a) Distance between Earth and Pluto _____

b) Distance between the Moon and the Sun _____

c) Distance between our galaxy and Andromeda _____

d) Distance between the Sun and Proxima Centauri _____

e) Distance between Earth and the Sun _____

f) Distance between the centre of the Milky Way and the solar system _____

2. What is the distance in kilometres (km) from Earth of the Canis Major galaxy if it is located 25 000 light years (ly) away?

a) 380 000 000 km

b) 2.375×10^{17} km

c) 25 billion km

3. Convert the distance of 4 000 astronomical units (AU) to light years (ly): 1 ly = 9 500 billion km and 1 AU = 150 million km.

Circle the correct answer and explain your calculations.

a) 2.38 ly

b) 0.063 ly

c) 63 333.33 ly

d) 600 000 ly

e) 15.8 ly

Name: _____ Group: _____ Date: _____

Scale of the Universe: astronomical unit, light year (*continued*)

4. Indicate if the following phenomena can be observed with the naked eye or if use of an instrument is required.

Phenomenon	Observation: Naked eye	Observation: Instrument
a) Seeming movement of stars in the sky	☐	☐
b) Composition of faraway planets	☐	☐
c) Lunar eclipse	☐	☐
d) Passage of a comet near Earth	☐	☐
e) Observation of the Earth outside its orbit	☐	☐
f) Phases of the Moon	☐	☐

5. True or false?

a) Mars and Mercury are planets among the first to be discovered because they can be seen with the naked eye from Earth. _____

b) The distance between Earth and the Moon is calculated in kilometres. _____

c) The distance between Earth and other celestial bodies is measured by radar. _____

d) Dwarf planet Pluto is 100 times further away from the Sun than Earth. _____

e) The speed of light is 300 000 km per day. _____

f) The concept of a year stems from the observation of celestial bodies and the changing seasons. _____

Name: _____ Group: _____ Date: _____

SPACE (ST) (*continued*)

STUDENT BOOK	Ch. 9, pp. 283–292

Location of Earth in the Universe

1. Match the following symbols with the correct definition below.

○ The Universe includes . . .
□ A galaxy includes . . .
△ The solar system includes . . .

a) planets, dwarf planets and other celestial bodies orbiting around its star.
b) a cluster of many stars and matter in orbit around its centre.
c) an astronomical number of celestial bodies and galaxies.

2. Match each term to a definition.

A. Star	G. Asteroid
B. Planet	H. Small solar system body
C. Dwarf planet	I. Sun
D. Celestial body	J. Earth
E. Satellite (natural)	K. Moon
F. Comets	L. Pluto

a) Natural object of the universe _____
b) Star at the centre of our solar system _____
c) Celestial body in orbit around a celestial body other than a star _____
d) Celestial bodies forming a belt between Mars and Jupiter _____
e) Celestial body considered a planet until 2006 _____
f) Ice-covered celestial bodies part of the Oort cloud _____
g) Celestial body located 384 000 km away from Earth _____
h) Non-brilliant spherical celestial body sharing an orbit only with its own satellites _____
i) Naturally brilliant celestial body _____
j) Planet with a diameter of 12 756 km at its equator _____
k) Celestial body other than a planet or a dwarf plant in orbit around the Sun _____
l) Spherical celestial body sharing its orbit around the Sun with other celestial bodies that are not its satellites. _____

Name: _____ Group: _____ Date: _____

Location of Earth in the Universe (*continued*)

3. Place all the planets and dwarf planets of the solar system in ascending order according to their number of known satellites.

_____

_____

4. **a)** What planet is the closest to Earth? _____

b) What planet is furthest away from Earth? _____

5. **a)** What dwarf planet is closest to the Sun? _____

b) What dwarf planet is furthest away from the Sun? _____

6. Circle the statements that are true.

a) Earth is the third biggest planet in the solar system.

b) The diameter of Earth is about 30 times smaller than the distance between Earth and the Moon.

c) The average temperature on Earth is the third highest among the planets, after Mercury and Venus.

d) The length of Earth's revolution around the Sun is the longest in the solar system.

e) Light from the Sun takes about eight minutes to reach Earth.

f) Earth is about 275 000 times closer to the Sun than the closest star in the solar system.