FPC 10 4.4 Scientific Notation

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Blk\_\_\_\_\_

1. Complete the following table.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Standard Notation** | **Expanded Form** | **Scientific Notation** |
| a | 252 000 |  |  |
| b | 0.0000072 |  |  |
| c |  |  |  |
| d |  |  |  |
| e |  |  |  |
| f |  |  |  |

1. Express in scientific notation.

a) 0.000015 b) 0.007 c) 0.1

d) 678 000 000 e) 701 000 f) 2990

1. Express each number in standard notation.

a)  b)  c) 

d) Mercury is 57.9 million km from the sun. e) A dust particle is  kg.

1. Simplify and write in scientific notation.

a)  b)  c) 

d)  e)  f) 

1. Express each of the following in scientific notation.

a)  b)  c) 

d)  e)  f) 

1. Using your exponent laws answer the following in scientific notation.

a)  b)  c) 

d)  e)  f) 

Express the following answers in scientific notation.

1. The speed of light is m/s. The sun is metres from the earth. Determine the number of seconds it takes for light to reach the earth.
2. The Great Galaxy in Andromeda is about light years from Earth. Light travels miles each year. How many miles is the Great Galaxy Andromeda from earth?

[ A **light**-**year** is a unit of distance. It is the distance that **light** can travel in one **year**.]

1. There are approximately atoms in 1 mg of lead. How many atoms are there in a kg of lead?
2. A red blood cell is about 0.0025 mm in diameter. How large would it appear if it were magnified 108 times?
3. The Burgess Shale in British Columbia’s Yoho National Park contains one of the world’s best fossil collections. The fossils are about years old. This is about times older than the first known human settlement in British Columbia. About how many years ago did humans first settle in British Columbia?

**Answers:**

4a  b.  c. 

 d.  e.  f. 

**5**a.  b.  c. 

 d.  e.  f. 

6a.  b.  c. 

 d.  e.  f. 

7. seconds

8. miles

9. atoms

10. mm

11. years

**Answers:**

**1**a. ; 

 b.  ; 

 c. 81 000 000; ;

 d. 0.00058; 

 e. 2060; 

 f. 0.000099; 

2a.  b.  c. 

 d.  e.  f. 

3a. 0.0000062 b. 70 000 000 c. 0.045

 d. 57 900 000 e. 0.00000000075