

Standard form and compound measures

1

Light travels at 3×10^8 m/s. How far does it travel in 5×10^2 seconds? Give your answer in standard form.

Formula $\text{speed} \times \text{time}$

$$3 \times 10^8 \times 5 \times 10^2$$

$$= \boxed{} = \boxed{} \text{ m}$$

Answer _____

2

A steel girder has a mass of 6×10^3 kg and a volume of 4×10^{-1} m³. Find its density in standard form.

Formula $\text{mass} \div \text{volume}$

$$\boxed{} \div \boxed{}$$

$$= \boxed{} = \boxed{} \text{ kg/m}^3$$

Answer _____

3

A force of 1.2×10^5 N acts on an area of 4×10^{-2} m². Find the pressure in standard form.

Formula $\boxed{}$

$$\boxed{} \div \boxed{}$$

$$= \boxed{} = \boxed{} \text{ N/m}^2$$

Answer _____

4

A space probe travels 6×10^9 km at 4×10^4 km/h. How long does the journey take? Give your answer in standard form.

$$= \boxed{} = \boxed{} \text{ hours}$$

Answer _____

5

A grain of sand has a volume of 2×10^{-9} m³. Sand has a density of 2.5×10^3 kg/m³. Find the mass of the grain in standard form.

Answer _____

6

Sound travels at 3.4×10^2 m/s. How many seconds does it take to travel 1.7×10^4 m? Give your answer as an ordinary number.

Answer _____

7

A snail moves at 1.2×10^{-3} m/s. How far does it move in 1 hour? Give your answer as an ordinary number.

Answer _____

8

Block A has a mass of 4.5×10^3 kg and a volume of 1.5 m³. Block B has a mass of 8×10^2 kg and a volume of 2×10^{-1} m³. Which block is denser?

Answer _____

Standard form and compound measures *further practice*

9

Light travels at 3×10^8 m/s. The Sun is 1.5×10^{11} m from the Earth. How many seconds does sunlight take to reach the Earth?

Answer _____

10

A raindrop has a mass of 4×10^{-6} kg and a volume of 4×10^{-9} m³. Find the density of the water in standard form.

Answer _____

11

A press puts a pressure of 2.5×10^6 N/m² on an area of 8×10^{-3} m². Find the force in standard form.

Answer _____

12

A cell is 1.2×10^{-7} m long. It moves at 3×10^{-8} m/s. How long does it take to move its own length?

Answer _____

13

A satellite moves at 7.5×10^3 m/s. There are 8.64×10^4 seconds in a day. How far does it travel in a day? Give your answer in standard form.

Answer _____

14

A metal cube has sides of 2×10^{-2} m and a mass of 6.4×10^{-2} kg. Find its density in standard form.

Answer _____

15

The Moon has a mass of 7.2×10^{22} kg and an average density of 3×10^3 kg/m³. Find its volume in standard form.

Answer _____

16

A signal travels 6×10^8 m in 2×10^3 seconds. Ana says its speed is 3×10^{11} m/s. Explain her mistake and find the speed.

Answer _____