CERTAINTY

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Certainty اليـــقين

- The method of measurement we use with the ruler is incorrect.
- Everything we see with our eyes is in the past, and everything we don't see is in the present.
- There is an average acceleration due to gravity that is half the acceleration due to gravity.
- Proof and alternative for the universal gravitational constant

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If we assume that Figure (1)shows a ruler that is 3 cm long, and we want to divide it among three people so that each of them has exactly 1 cm, with nothing less,

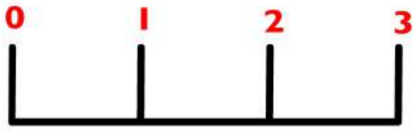


Figure (1)

Dear reader, don't be surprised by this question, and don't rush to answer it. This question will open your eyes to things hidden from all of us.

and Don't accuse me of being crazy, for I still possess a small part of sanity.

The correct answer is 1 cm per person, but how and what measurement method do we use?

You might say the method is well-known. So let's use it.

Our method of measuring with a ruler is to stand at the boundaries. For example, we stand at boundary (0) , then at boundary (1). The first person takes the first 1 cm,

but where do we stand on the ruler for the second person?

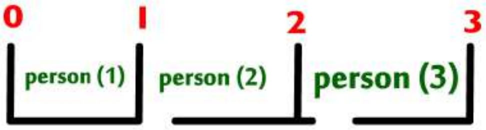


Figure (2)

When we stand at boundary (1), we have already taken it for the first person,

as shown in Figure (2). It is not reasonable to give the same boundary to both of them.

We will address the matter in another way, which is to stand at the midpoint of the boundaries, so that we stand at the first boundary and then at the midpoint of the second boundary, as shown in Figure (3).

You might say the problem is solved upon seeing the figure, but wait,

the second person was wronged because he only took 2half a boundary,

while the first and third took one and a half boundaries.

Figure (2)

Let's address the issue from another perspective, which is drawing a circle.

It is known that a circle has no starting point and no ending point,

but in our method of measurement, we have made every circle we draw have

a starting point and an ending point, as in Figure (4).

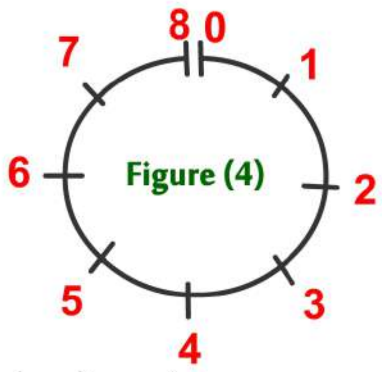


Figure (4)

For example, if we take an 8 cm long rubber ruler and make a circle out of it,

we find that the first and last edges are adjacent and they represent two starting and ending points.

So what is the correct way to measure with a ruler?

We find it in two verses in the Holy Quran,

تِلْكَ حُدُودُ اللَّهِ فَلَا تَقْرَبُوهَا
تِلْكَ حُدُودُ اللّهِ فَلاَ تَعْتَدُوهَا

and in short, it says that we stand at the first limit and do not go beyond it,meaning the limit (0),

and we come to the second limit and do not approach it, meaning the limit (1)

In other words, just before the final limit to be measured, and we do not touch it.

Thus, each person takes exactly 1 cm, no one more than the other, as in Figure (5).

Thus, the circle remains as it is, with neither a starting point nor an end point, as shown in Figure 6.

Figure (5)

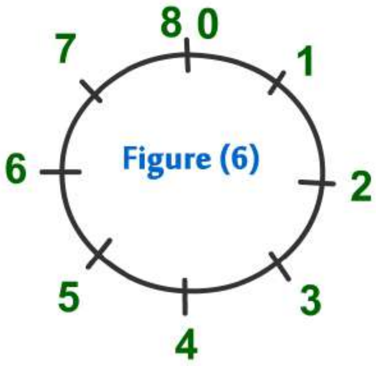


Figure (6)

● Everything we see with our eyes is in the past, and everything we don't see is in the present.

In the past, it was believed that light emanated from our eyes, allowing us to see things.

However, we later learned that light falls on objects and then enters the eye.

The eye and brain then interpret the incoming light, enabling us to see things.

Therefore, the reflection of light on objects results in seeing those objects.

For example, when you see a friend, light has fallen on them and then reflected back into your eye.

Thus, a very short time has passed since you saw them because the speed of light is extremely high.

When you stand in front of a mirror, light falls on you and then reflects off the mirror, which in turn reflects it back into your eyes.

You see yourself reflected in the mirror,

And if you make any movement, you'll find yourself in the mirror moving in exactly the same way, as if you were in that exact moment

Even though, as mentioned, the light has undergone several reflections to allow you to see yourself in the mirror.

Let's move a mirror to a distance roughly equal to the speed of light, 300,000,000 meters, and see what happens.

Our instruments are a picture frame on Earth and a mirror in space at the distance light travels in one second, as shown in Figure **A**. A police officer is waiting to enter the frame.

Upon entering, he doesn't see himself in the mirror, as shown in Figure **B**. As mentioned, light must fall on him,then travel towards the mirror, which reflects it back onto his eyes.

This entire back-and-forth takes about two seconds. Then we see the mirror with the police officer inside, as shown in Figure **C.**

If an officer wanted to salute himself, he wouldn't see his hand raised in the mirror as shown in Figure **D.**

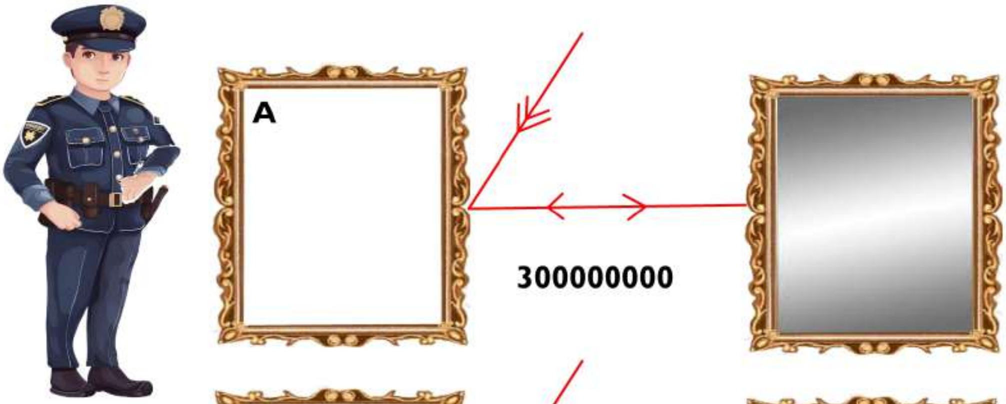
But finally, after two seconds, the salute would be performed as shown in Figure **E.**

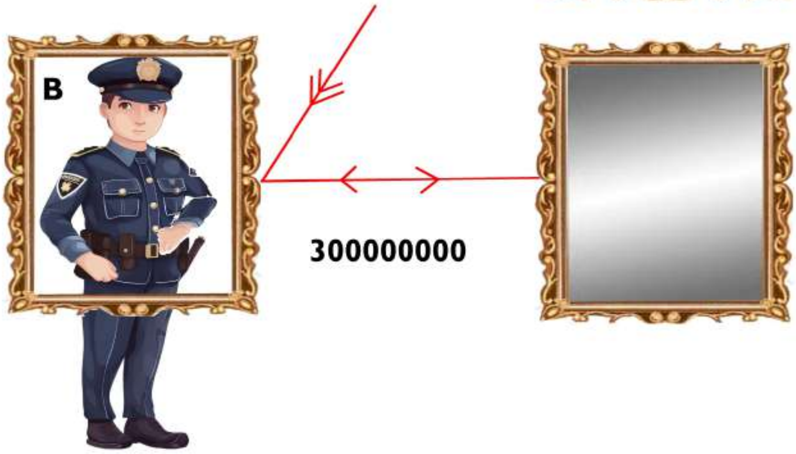
Everything we see in the past was seen by light before us, and it preceded us in seeing it.,

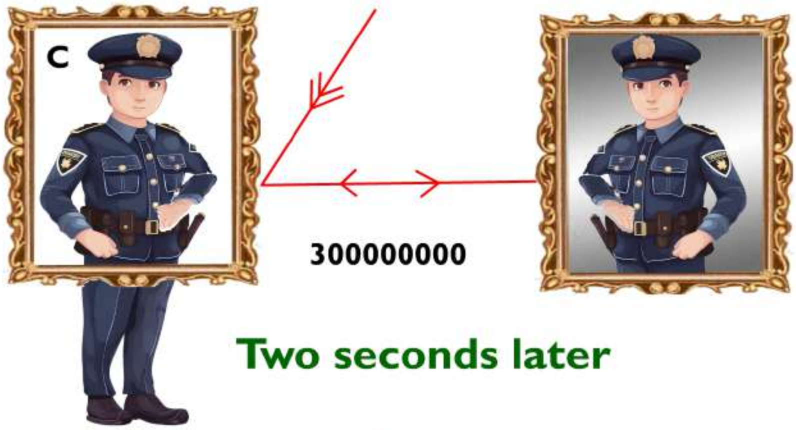
and everything we don't see is present, even if the distance is reduced.

In other words, everything we have in our hands is the past, and what is behind us (**Meaning what we do not see**) is the present.

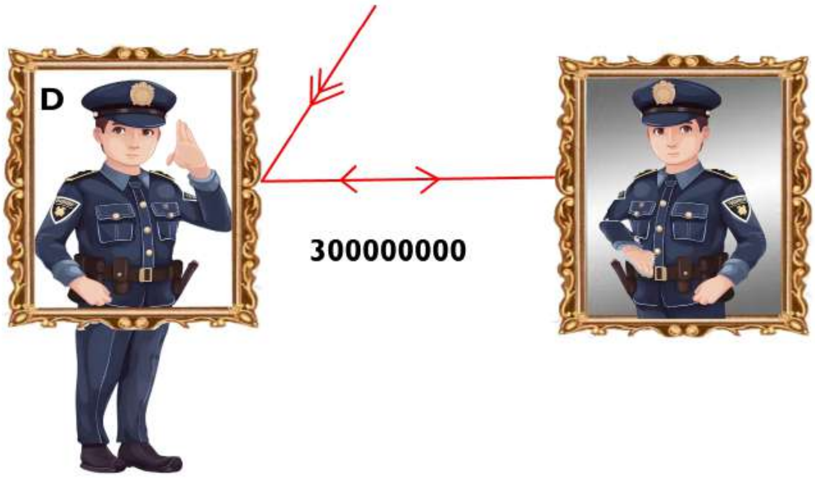
إِذْ جَاءَتْهُمُ الرُّسُلُ مِن بَيْنِ أَيْدِيهِمْ وَمِنْ خَلْفِهِمْ

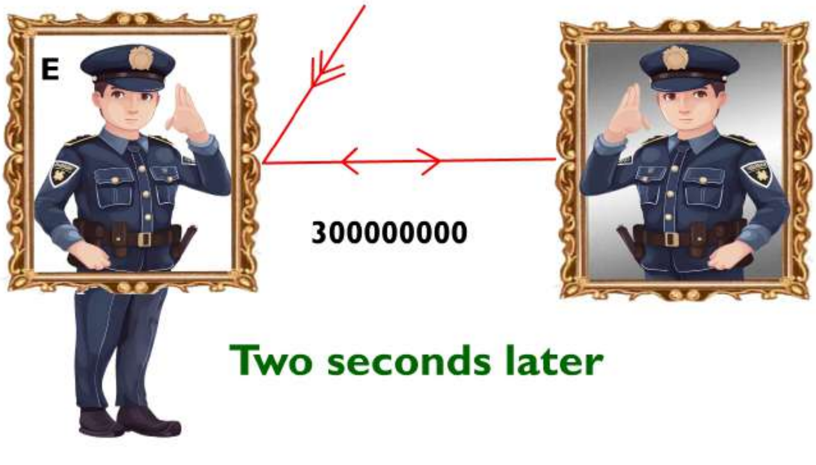






Two seconds later





Two seconds later

● There is an average acceleration due to gravity that is half the acceleration due to gravity.

We all know that acceleration is the change in velocity, and there are different types of acceleration, including increasing and decreasing. The most well-known type is the acceleration due to gravity, which is estimated at $9.8 m/s^2$. This is a uniform acceleration, meaning that if a stone is dropped from any height, it will travel with an acceleration of $9.8 m/s^2$.

The acceleration was measured by subtracting the final velocity from the initial velocity and dividing by time. However, we found that there is also an average velocity for the stone. This average velocity is calculated by adding the initial and final velocities and dividing by 2, as shown below. This reveals a change in the average velocity, as shown in Figure (F) on page (6). As a result of this change in velocity, we also found an average acceleration, which we measured at $4.9 m/s^2$.

The laws related to this acceleration were arranged, and the symbol ($1 \xleftrightarrow[2]{} \times t$) was placed to indicate that multiplying Law (1) by time results in Law (2), And so on, until we reach the seventh law.

The general laws of attraction derived from the sixth and seventh laws will be discussed in a later section, since all the laws stem from a single source.

When the $V_o = 0$

$$g = \frac{V_f - V_o}{t} \qquad \bar{V} = \frac{V_f + V_o}{2} \qquad \bar{g} = \frac{\bar{V} - V_o}{t}$$

1 $\bar{v} = \bar{v}$ $\qquad 1 \xleftrightarrow[2]{} \times t$

2 $d = t\,\bar{v}$ $\qquad 2 \xleftrightarrow[3]{} \times t$

3 $d = \bar{g}\,t^2$ $\qquad 3 \xleftrightarrow[4]{} / t$

4 $\bar{v} = \bar{g}\,t$ $\qquad 4 \xleftrightarrow[5]{} \times \bar{v} \quad 4 \xleftrightarrow[6]{} \times m$

5 $\bar{v}^2 = \bar{g}\,d$ $\qquad 5 \xleftrightarrow[7]{} \times m$

6 $m\,\bar{v} = \bar{g}\,t\,m$

7 $m\,\bar{v}^2 = \bar{g}\,d\,m$

1 $2\bar{v} = v_f$ $\qquad 1 \xleftrightarrow[2]{} \times t$

2 $d = \frac{1}{2}\,t\,v_f$ $\qquad 2 \xleftrightarrow[3]{} \times t$

3 $d = \frac{1}{2}\,g\,t^2$ $\qquad 3 \xleftrightarrow[4]{} / t$

4 $v_f = g\,t$ $\qquad 4 \xleftrightarrow[5]{} \times v_f \quad 4 \xleftrightarrow[6]{} \times m$

5 $v_f^2 = 2\,g\,d$ $\qquad 5 \xleftrightarrow[7]{} \times m$

6 $m\,v_f = g\,t\,m$

7 $m\,v_f^2 = 2\,g\,d\,m$

$g = 9.8 m/s^2$ $\bar{g} = 4.9 m/s^2$

$\bar{g}$ Average gravitational acceleration

m mass

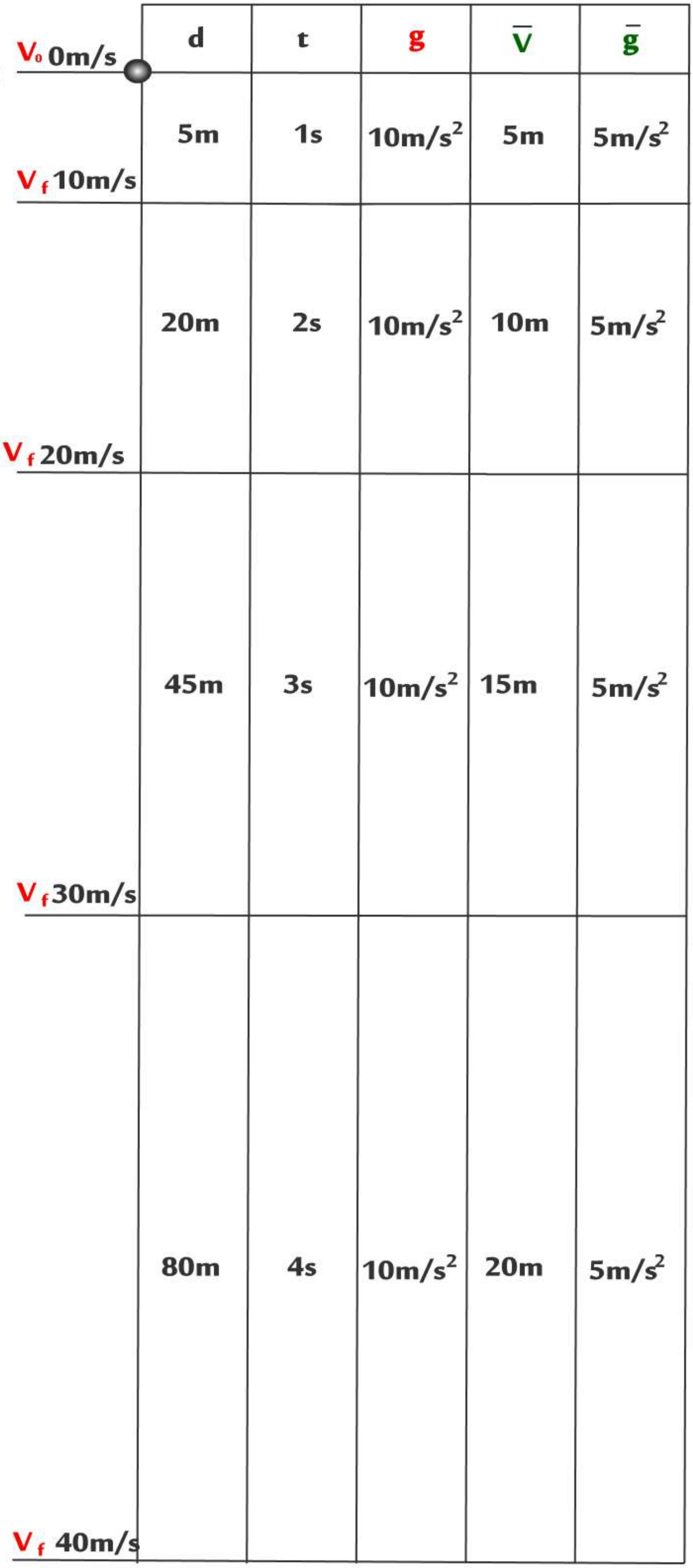
d distance

t time

V_0 initial velocity

V_f Final velocity

$\bar{V}$ Average velocity



d	t	g	$\bar{V}$	$\bar{g}$
5m	1s	$10 m/s^2$	5m	$5 m/s^2$
20m	2s	$10 m/s^2$	10m	$5 m/s^2$
45m	3s	$10 m/s^2$	15m	$5 m/s^2$
80m	4s	$10 m/s^2$	20m	$5 m/s^2$

Figure (F)

$$6 \quad m\,v_f = g\,t\,m$$

$$7 \quad m\,v_f^2 = 2\,g\,d\,m$$

$$V_o = 0$$

$$8 \quad g\,t\,m\,m\,v_f^2 = m\,v_f\,2\,g\,p\,m \longleftarrow \bar{v} = \frac{V_f + V_o}{2} \qquad d = p = 2\pi r = t\,v$$

$$9 \quad g\,t\,m^2\,4\,\bar{v}^2 = 2\,\bar{v}\,2\,g\,p\,m^2 \qquad 9 \xleftrightarrow[10]{} \times\, t$$

$$10 \quad g\,m^2\,p^2\,4 = g\,p^2\,m^2\,4$$

$$11 \quad \frac{g\,p^2 4}{m} = \boxed{\frac{g m\,p^2 4}{m\;m}}$$

m	Planetary mass
g	Gravitationalacceleration
r	Planetary radius
v	Planetary rotational speed
T	Planetary rotation period
p	Circumference

$$\boxed{g = \frac{m\,A}{p^2\,4}} \longrightarrow \boxed{g = \frac{m\,A}{(2\pi r)^2\,4}} \longrightarrow \boxed{g = \frac{m\,A}{(Tv)^2\,4}}$$

$$11 \quad \frac{g\,p^2 4}{m} = \boxed{\frac{g m\,p^2 4}{m\;m}} \qquad 11 \xleftrightarrow[12]{} \times\, m$$

g replace a

m	Stellar mass
r	Distance between the two masses
v	Planetary orbital speed around the star
a	Centripetal acceleration
T	Orbital period
A	1.054e-8 Nm^2/Kg^2

$$12 \quad \frac{a\,m\,p^2\,4}{m_2\,m_1} = \boxed{\frac{(am)\,p^2 4}{m_2\,m_1}}$$

$$\boxed{ma = \frac{m_2\,m_1 A}{p^2\;4}} \qquad \boxed{ma = \frac{m_2\,m_1 A}{(2\pi r)^2\;4}} \qquad \boxed{ma = \frac{m_2\,m_1 A}{(Tv)^2\;4}}$$

$$\boxed{F\,T = \frac{m_2\,m_1 A}{Tv^2\;4}} \qquad \boxed{KE = \frac{m_2\,m_1 A}{T\,v\;4}} \qquad \boxed{E = \frac{m_2\,m_1 A}{T\,v\;8}}$$

10 $a\,m^2 p^2 4 = a\,p^2 m^2 4 \longleftarrow a = \frac{v^2}{r} = \frac{2\pi^2\, r}{t\ t}$ $\quad p = 2\pi r = t\ v$

10 $v^2 m^2\ 2\pi^2 r\ 4 = v^2\ 2\pi^2 r\ m^2 4$

13 $\frac{v^2\ 2\pi^2 r\ 4}{m} = \boxed{\frac{v^2\ 2\pi^2 r\, m\, 4}{m\ m}}$ $\quad A\ 1.054e\text{-}8\ Nm^2/Kg^2$

$\boxed{v^2 = \frac{m\ \ A}{2\pi\, p\, 4}} \longrightarrow \boxed{v^2 = \frac{m\ \ A}{2\pi^2 r\ \ 4}} \longrightarrow \boxed{v^3 = \frac{m\ \ A}{2\pi\ T\, 4}}$

10 $v^2 m^2\ 2\pi^2 r\ 4 = v^2\ 2\pi^2 r\ m^2 4 \ —\ v^2 = \frac{2\pi^2\ r\, r}{t\ t}$

$\frac{2\pi^4 r^3\ \ m^2\ 4}{T^2} = \frac{2\pi^4\ r^3 m^2\ 4}{T^2}$

14 $\frac{2\pi\, p^3\ 4}{m\,T^2} = \boxed{\frac{2\pi\, p^3 m\, 4}{T^2\, m\, m}}$

m Stellar mass

r Distance between the two masses

v Planetary orbital speed around the star

a Centripetal acceleration

T Orbital period

A 1.054e-8 Nm^2/Kg^2

$\boxed{T^2 m\ A = 4\ p^3\ 2\pi} \longrightarrow \boxed{T^2 m\ A = 4\ 2\pi^4\ r^3}$

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وَمَا تَوْفِيقِي إِلَّا بِاللَّهِ عَلَيْهِ تَوَكَّلْتُ وَإِلَيْهِ أُنِيبُ