

# HANG TIME-MAXIMUM JUMP HEIGHT-FILL-IN

## WHAT IS HANG TIME?

$t_{hang}$  is measured from the instant the basketball player's feet leave the ground until the time the player's feet return to the ground.

To calculate your HANG TIME from your measured MAXIMUM JUMP HEIGHT

Complete the steps below to determine your stretching reach and then your jumping reach

- 1- Stand sideways against the tape measure with both feet on the ground and reach up with one hand, stretch and mark the highest point on the tape

STRETCHING REACH HEIGHT = \_\_\_\_\_ INCHES

- 2- Next, jump up vertically as high as you can and mark the highest point you can reach on the tape.

JUMPING REACH HEIGHT = \_\_\_\_\_ INCHES

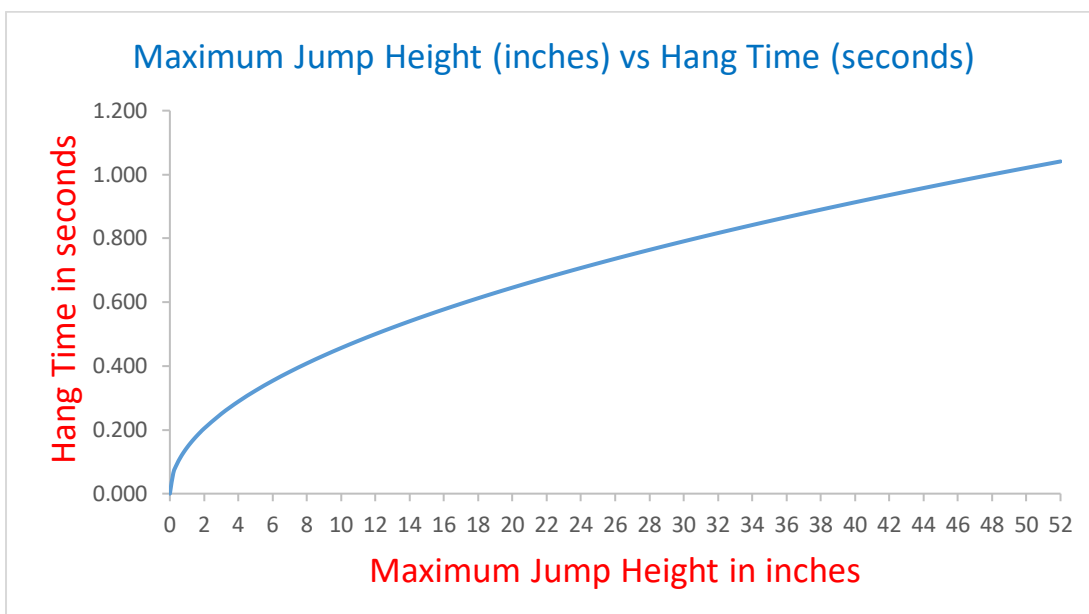
- 3- Subtract measurement in step 1 from the measurement in step 2. This is the height your feet are above the floor.

MAXIMUM JUMP HEIGHT  $h_{max}$  = \_\_\_\_\_ INCHES

Put the height  $h_{max}$  you get from step 3 into the Equation below. Use a calculator to get the Square Root.

$$t_{hang} = \sqrt{(h_{max}/48)} \text{ seconds} = \underline{\hspace{2cm}} \text{ seconds}$$

FROM THE GRAPH BELOW ONE CAN ESTIMATE HANG TIME FROM ANY JUMP HEIGHT



# HOW HIGH CAN YOU JUMP AND WHAT WOULD BE YOUR HANG TIME ON OTHER BODIES IN OUR SOLAR SYSTEM?

From other side:

Your measured **JUMP HEIGHT** is: \_\_\_\_\_ inches

Your calculated **HANG TIME** is: \_\_\_\_\_ seconds

The surface gravity on other bodies in our solar system is different than that of the Earth. The **g-factor** is the ratio of the surface gravity elsewhere compared to the surface gravity on Earth.

Then the **JUMP HEIGHT** on other bodies = **JUMP HEIGHT** on Earth/(**g-factor**)

And the **HANG TIME** on other bodies = **HANG TIME** on Earth/(**g-factor**)

Member of Solar System and Their Surface Gravity <b>g-factor</b>	How High Can <b>Michael Jordan</b> Jump From Each Surface? <b>Jump Height/(g-factor)</b>	How Long Will <b>Michael Jordan</b> Hang in the Air? <b>Hang time/(g-factor)</b>	How High Could <b>You</b> Jump from Each Surface? Your <b>Jump Height/(g-factor)</b>	How Long Will <b>You</b> Hang in the Air <b>Hang time/(g-factor)</b>
Earth 1.00	Say 48 inches	1.00 seconds		
Sun 27.90	1.72 inches	0.036 sec		
Mercury 0.38	126.3 (Over 10 feet)	2.63 sec		
Venus 0.91	53.75 inches	1.10 sec		
Mars 0.38	126.3 (Over 10 feet)	2.63 sec		
Jupiter 2.36	20.34 inches	0.42 sec		
Saturn 0.92	52.17 inches	1.09 sec		
Uranus 0.89	53.93 inches	1.12 sec		
Neptune 1.12	42.68 inches	0.89 sec		
Pluto 0.06	800 (Over 66 feet)	16.67 sec		
Moon 0.16	300 (25 feet)	6.25 sec		