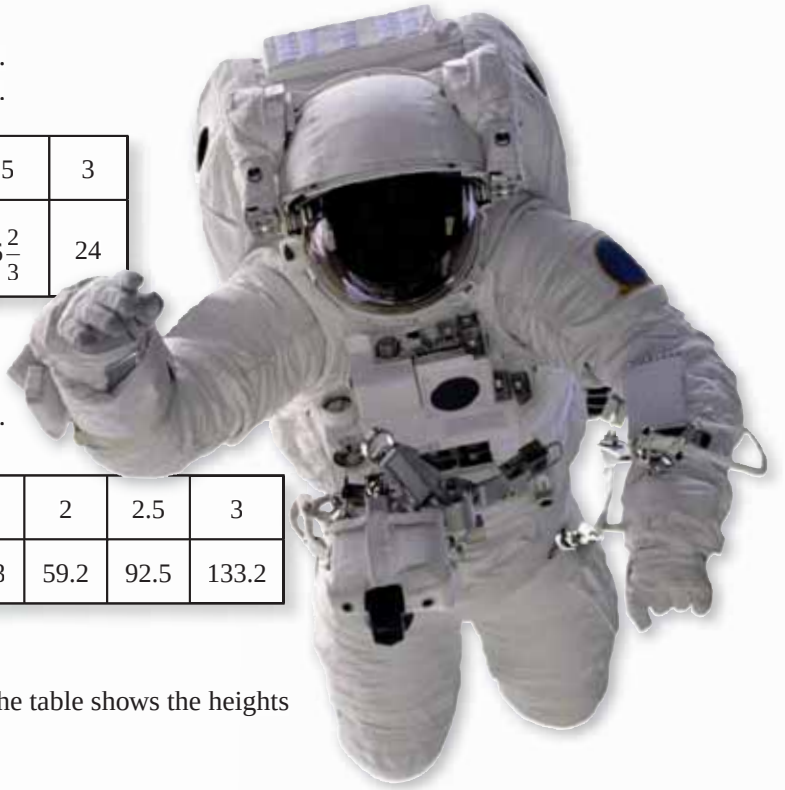
Gravity **In Exercises 13–16, determine whether the pattern in the table is linear, exponential, quadratic, or none of these. Explain your reasoning.** ***(See Examples 5 and 6.)***



13. An object is dropped from a height of 50 feet on the moon. The table shows the distances it has fallen at various times.

Time (sec)	0	0.5	1	1.5	2	2.5	3
Distance (ft)	0	$\frac{2}{3}$	$2\frac{2}{3}$	6	$10\frac{2}{3}$	$16\frac{2}{3}$	24

14. An object is dropped from a height of 150 feet on Venus. The table shows the distances it has fallen at various times.

Time (sec)	0	0.5	1	1.5	2	2.5	3
Distance (ft)	0	3.7	14.8	33.3	59.2	92.5	133.2

15. An object is dropped from a height of 300 feet on Mars. The table shows the heights of the object at various times.

Time (sec)	0	1	2	3	4	5	6
Height (ft)	300	293.8	275.2	244.2	200.8	145	76.8

16. An object is dropped from a height of 1600 feet on Jupiter. The table shows the heights of the object at various times.

Time (sec)	0	1	2	3	4	5	6
Height (ft)	1600	1556.8	1427.2	1211.2	908.8	520	44.8

17. **Sign of Second Differences** Graph the data in Exercises 14 and 15 on the same coordinate plane. Compare the graphs. What appears to be the relationship between the sign of the second differences and the corresponding graph?

18. **Moon** The moon's gravitational force is much less than that of Earth. Use the table in Exercise 13 and the table in Example 5 on page 328 to estimate how many times stronger Earth's gravitational force is than the moon's gravitational force. Explain your reasoning.