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HW 5

1. Increment
2. GET start, end, increment, perLine
3. Boolean stop = false
4. While(!stop)
5. For(i=0; I < perLine ; i++)
6. Print start + “ “
7. Start += increment
8. If end<0
9. If start < end
10. Stop = true
11. Break
12. Else
13. If start>end
14. Stop = true
15. Break
16. Print line “”

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| Test Case | Sample Data | Expected Result | Tested |
| Pos increment | 0 4 1 3 | 0 1 2  3 4 | yes |
| Neg increment | 10 -10 -3 2 | 10 7  4 1  -2 -5  -8 | yes |
| Increment factor of |start – end| | 0 7 1 3 | 0 1 2  3 4 5  6 7 | yes |
| Increment not factor of |start – end| | -30 29 5 5 | -30 -25 -20 -15 -10  -5 0 5 10 15  20 25 | Yes |
| Start == end | 10 10 1 3 | 10 | yes |
| Large perLine | 0 10 1 7 | 0 1 2 3 4 5 6  7 8 9 10 | yes |
| Small perLine | 0 20 6 1 | 0  6  12  18 | yes |

1. Ball
2. bounceTable
3. if initialheight < 0
4. Height = Math.abs(initialHeight)
5. Else
6. Height = initialHeight
7. If bounceCount<0
8. numBounce = Math.abs(bounceCount)
9. Else
10. numBounce = bounceCount
11. Print “ Bounce Height”
12. For (i=0; i<= numBounce; i++)
13. Print (i + height)
14. Height = height\*percent
15. Print line()
16. \_\_
17. Main method
18. Get bounce percentage, initial height, bounce count
19. Create new object with bounce
20. Call bounceTable method given the intial height and bounce count

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| Test Case | Sample Data | Expected Result | Tested |
| default | Bounce = .5  Height = 100  Bounces = 5 | Bounce Height  0 100  1 50  2 25  3 12.5  4 6.25  5 3.125 | yes |
| 100%+ bounce(cant have 100% so just makes it default bounce) | Bounce = 1.10  Height = 100  Bounces = 6 | Bounce Height  0 100  1 50  2 25  3 12.5  4 6.25  5 3.125  6 1.5625 | yes |
| Negative bounce(cant so just makes it default bounce) | Bounce = -.75  Height = 100  Bounces = 3 | Bounce Height  0 100  1 50  2 25  3 12.5 | yes |
| Negative height(cant so just makes it positive) | Bounce = .5  Height = -100  Bounces = 4 | Bounce Height  0 100  1 50  2 25  3 12.5  4 6.25 | yes |
| 0 height | Bounce = .75  Height = 0  Bounces = 3 | Bounce Height  0 0  1 0  2 0  3 0 | yes |
| normal | Bounce = .75  Height = 100  Bounces = 5 | Bounce Height  0 100  1 75  2 56.25  3 42.1875  4 31.640625  5 23.73046875 | yes |

1. Particle
2. Location
3. Loc = a \* Math.pow(time, 4) + b \* Math.pow(time, 3) + c \* Math.pow(time, 2) + d \* time
4. Return loc
5. Velocity
6. Vel = 4 \* a \* Math.pow(time, 3) + 3 \* b \* Math.pow(time, 2) + 2 \* c \* time
7. Return vel
8. Table
9. If increment <= 0
10. Print cant have negative or 0 increment
11. Else if end-start <= 0
12. Print cant have end time be less than or equal to start time
13. Else
14. Print “Time Location Velocity”
15. For( i=start; i<=end; i+increment)
16. Print ( i+ “ ” +location(i) + “ “ + velocity(i))
17. \_\_
18. Main method
19. Get a, b, c, d, start, end, increment
20. Create an object with a,b,c,d
21. Call table method given the start,end,increment

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| Test Case | Sample Data | Expected Result | Tested |
| normal | .2 .3 .1 .5  Start = 0  End = 5  Increment = 1 | Time Location Vel  0 0 0  1 1.1 1.9  2 7 10.4  3 26.7 30.3  … | yes |
| Negative values | .15 -.2 .1 -.25  Start = 1  End = 5  Increment = .5 | Time Location Vel  1 -.2 .2  1.5 -.066 .975  2 .7 2.8  2.5 2.734 6.125  3 6.9 11.4  … | yes |
| negative increment | .15 -.2 .1 -.25  Start = 1  End = 5  Increment = -1 | Cant have negative or 0 increment | yes |
| End time less than start time | .15 -.2 .1 -.25  Start = 5  End = 1  Increment = .5 | Cant have end time be less than or equal to start time | yes |
| 0 increment | .15 -.2 .1 -.25  Start = 1  End = 5  Increment = 0 | Cant have negative or 0 increment | yes |