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Infinite Distance Problem

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Abstract: *- You can always take half of a half. So how do we ever get from point A to point B? The answer lies in calculus – the integral applied to the distance equation from Physics. In this paper, we show how that is done. We must be permitted to use calculus since the distance is dependent upon derivatives, s, v, and a.*

Introduction

The long-standing problem of splitting an infinite number of distances by ½ each time, how do you ever get from point A to point B? In a previous paper, I postulated that point A moves toward point B by the same amount in opposite directions towards each other. A sceptic would say, ah, but the movement is against a background, say a tree for example.

The way this problem is solved is simple if we use calculus and our knowledge of AT Math. We begin with the distance equation.

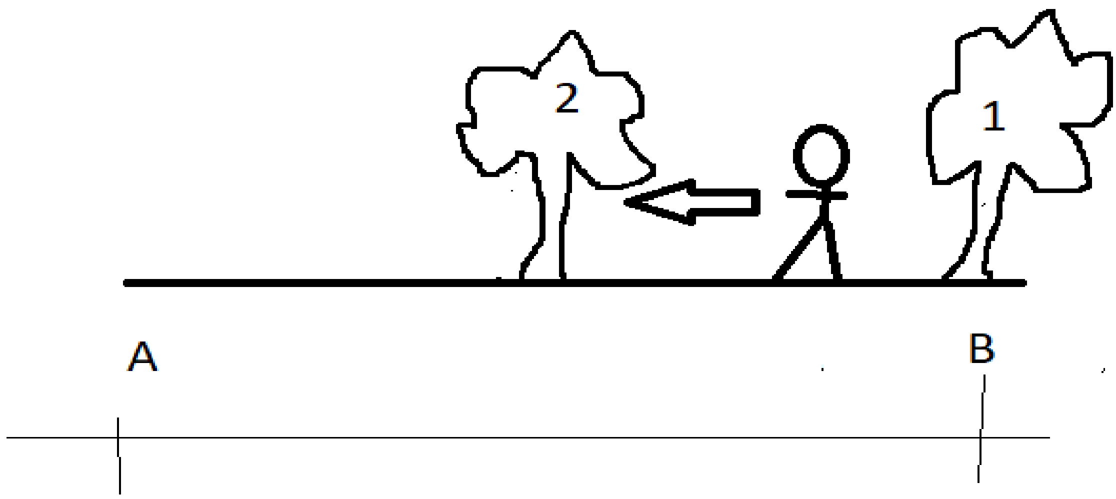

Figure 1 Point A to Point B against a background.

If we were to measure the distance traversed against tree 1,, then against Tree 2, and so on infinitum, we must simply add these distance up. This summation is the integral. We apply the integral on the distance equation.

$$d=v_it+1/2at^2$$

$$\int d=\int v_it+1/2\int at^2$$

$$D^2/2=s^2/2+1/2(a)\ (2t)$$

$$d^2=s^2+2at$$

$$d=s$$

$$2at=0$$

$$a=0$$

$$d=v_it$$

$$t=1/2Mv^2=1/2(4)\ d=2d$$

$$d=VI\ (2d)$$

$$v=1/2$$

$$d=VT=(1/2(1)=1/2$$

So the distance travelled from point B to point A relative to the trees is 1/2.

$$\int d=\int 1/2\ DT$$

$$D^2/2=1/2\ (t)$$

$$d^2=t$$

$$d=VT=\sqrt{}\ (2d)=\sqrt{1}=\pm 1$$

Conclusion

Therefore, the distance travelled is 1 or 100%. This is how we move from Point B to Point A with infinitesimal steps. You must invoke calculus because the distance equation involves s=v=a s=t=d are derivatives.