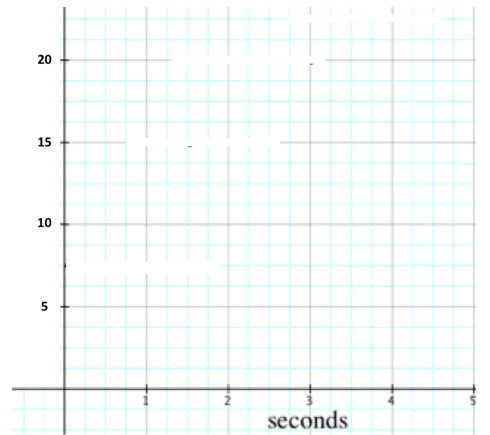
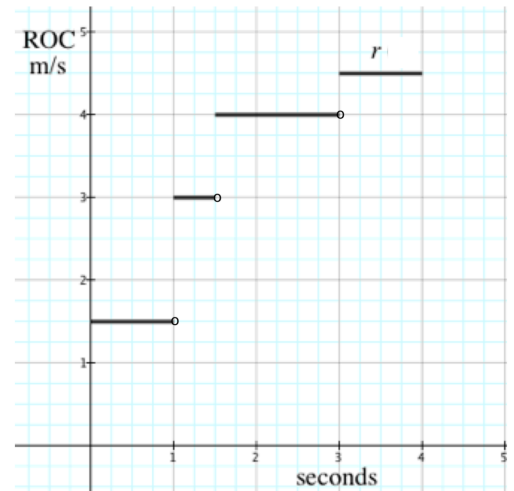


1. The graph at right shows r , the approximate rate of change function for the height (h) of a rocket firework, t seconds after it's launched from the top of a 0.8 m tall concrete pedestal.

a) Sketch on the blank axes the approximate accumulation function, i.e. the function that gives the accumulated *changes* in height of the rocket at any time t since launch. Show all your work, and **include symbolic representations of the calculations you make.**

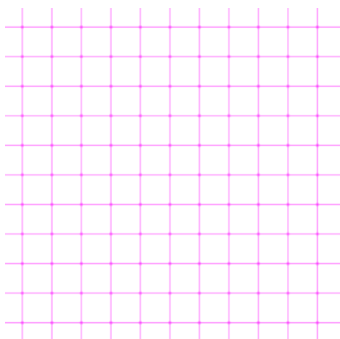


b) What kind of function is the rocket's height *above the ground* with respect to time? How would its graph be different from the graph of the accumulation function you sketched?

2. An exact rate function is given by $r_B(x) = x^2 - 7, x > 0$. Construct an approximate rate of change function r that... i) begins at $x = 0$, ii) has 3 intervals (moments) with $\Delta x = 2$, and iii) uses a 'left' approach to determine approximate constant rates. Sketch r and define it symbolically.

Sketch of r :

Symbolic (or numeric) definition of function r :



**Do not turn this sheet
over until you are
instructed to begin.**