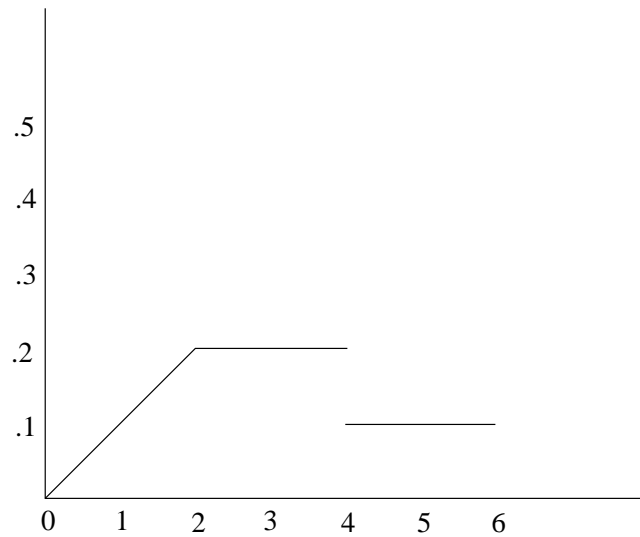


NAME: \_\_\_\_\_

- (1) Let  $X$  be a continuous random variable whose possible values are all numbers between 0 and 6. Below is a sketch of the probability density function of  $X$ .



- (a) Find  $P(X < 2)$ . Show your work.

- (b) Find  $P(2 < X < 4)$ . Show your work.

- (c) Find  $P(X > 3)$ . Show your work.

- (d) Find  $P(X < 1.3)$ . Show your work.

(2) The probability that I forget to do a task that I don't write down is .1. Suppose that I have 9 tasks to do and that I don't write any of them down. Assume that whether or not I do a task is independent of the other tasks. Define  $X$  to be the number of tasks that I remember to do.

(a) What is the probability that I forget exactly 2 tasks? SHOW YOUR WORK!  
(HINT:  $X$  is a binomial random variable.)

(b) What is the probability that I forget less than 2 tasks? SHOW YOUR WORK!