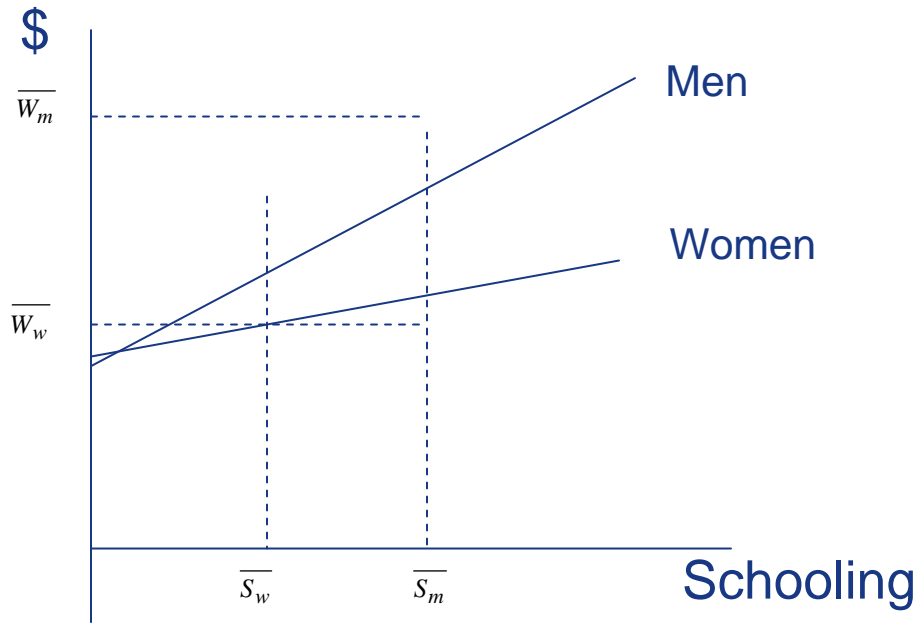


**Discrimination**

1. a. Mark or circle the point that indicates the **average wage women would have earned** if they had the **same average education as men**.



b. Beside Oaxaca Decompositions, what other type of study is commonly used by economists to investigate race or gender discrimination in wages or hiring? Explain briefly how this other type of study works.

2. You manage a golf ball retrieval surface. (Your workers retrieve golf balls from water hazards.) You are told to devise a tournament for your workers. The quantity of golf balls they retrieve is

$$q = m + e$$

where  $q$  is the number of golf balls,  $m$  is effort, and  $e$  is a luck factor. The company sells these golf balls for **\$12 each**. There are two workers,  $j$  and  $k$ . Each worker experiences luck,  $e_j$  and  $e_k$ , respectively.  $x = e_k - e_j$  takes on values between  $-1/6$  and  $1/6$  with a uniform probability distribution. (This means  $g(x)$ , the PDF of  $e_k - e_j$ , is equal to 3 at all points between  $-1/6$  and  $1/6$ . In particular, it means  $g(0)=3$ .)

Worker utility is  $E(\text{wage}) - 3m^2$ . **This means  $C(m) = 3m^2$ .**

This is a 1 period model: You announce that at the end of period 1, the worker who retrieves the most golf balls will receive  $w_1$  and the worker who lost will be paid  $w_2$ .

- If the firm chooses the profit-maximizing  $w_1$  and  $w_2$ , how much effort  $m$  will each worker choose?
- What  $w_1$  and  $w_2$  will the firm choose to get the workers to put forth this amount of effort?
- Now suppose that there are only 2 workers again, and that prices and productivity are the same as in a). **But suppose the tournament causes the workers to sabotage each other.** Part of their effort goes toward undermining the other worker. Specifically, when worker 1 puts forth effort  $m$ , he reduces workers 2's output by  $m/2$  units. Similarly, when worker 2 chooses effort  $m$ , he reduces workers 1's output by  $m/2$  units. What is the optimal amount of effort,  $m^*$ , the firm would like to get from each worker?