

# 2012 Multiple Choice #8 Homework Problem

## Wednesday 04/22

8. A company sells concrete in batches of 5 cubic yards. The probability distribution of  $X$ , the number of cubic yards sold in a single order for concrete from this company, is shown in the table below.

$X = \text{the number of cubic yards}$	10	15	20	25	30
Probability	0.15	0.25	0.25	0.30	0.05

The expected value of the probability distribution of  $X$  is 19.25 and the standard deviation is 5.76. There is a fixed cost to deliver the concrete. The profit  $Y$ , in dollars, for a particular order can be described by  $Y = 75X - 100$ . What is the standard deviation of  $Y$ ?

- (A) \$332.00
- (B) \$432.00
- (C) \$532.00
- (D) \$1,343.75
- (E) \$1,400.00