Quiz Ch6 #1 “AP Stats”

**Multiple Choice**

1. Suppose X and Y are random variables with: *μx* = 21,  *σx* = 12, *μy* = 17, and *σy* =5. Given that X and Y are independent, what is the standard deviation of the random variable X - Y?

(a) √7

(b) √17

(c) 7

(d) 13

(e) 17

2. Mr. Pines favorite game show “*Who Wants to Win a Non Life Changing Amount of Money*” has the following payouts and probabilities:

|  |  |  |  |
| --- | --- | --- | --- |
| Payoff($) | 0 | 50 | 200 |
| Probability | .65 | .30 | .05 |

What are the mean and standard deviation of this data?

(a) *μ* = 25,  *σ* = 37.3

(b) *μ* = 83.3,  *σ* = 46.1

(c) *μ* = 83.3,  *σ* = 37.3

(d) *μ* = 25,  *σ* = 46.1

(e) None of the above are correct

3. Mr. Pines charges $23 to get into his indoor washer toss facility. 65% of customers play the traditional “box washers” and the rest play the “3-hole” game. It costs Mr. Pines on average about $3 per person to maintain the “box washers” games and $5 per person to maintain the “3-hole” games. How much profit can he expect to make on 10 customers?

(a) $3.70

(b) $37.00

(c) $193

(d) $19.30

(e) $190

Name:

4. Suppose A and B are independent random variables, both are normally distributed. Consider that A is N(32,8) and B is N(24,6), what is the probability that a randomly generated value of A is greater than a randomly generated value of B?

(a) .5000

(b) .7763

(c) .7881

(d) .8000

(e) .6271

5. A daily lottery ticket costs $5 in a certain state. This state is required to sell exactly 1,000 tickets. One lucky winner will win the jackpot of $3,000 each day. What is the expected profit for any one person who purchased one ticket?

(a) $3,000

(b) -$2.00

(c) $3.00

(d) -$5.00

(e) -$2.50