AP STATISTICS
Homework #30 – ANSWERS ONLY

1. a) $E(X + Y) = 90$, $SD(X + Y) = 13$
   b) $E(3Y) = 30$, $SD(3Y) = 15$
   c) $E(X – Y) = 70$, $SD(X – Y) = 13$
   d) $E(Y_1 + Y_2 + Y_3) = 30$, $SD(Y_1 + Y_2 + Y_3) = 8.66$
   e) $E(2X + 4Y) = 200$, $SD(2X + 4Y) = 31.2410$

2. a) mean = \$300, SD = \$8485.2814...
   b) mean = \$1,500,000, SD = \$600,000

3. a) $E(M + N) = \$1{,}100$, $SD(M + N) = \$125$
   b) $P(M + N > \$1300) = 0.0548$ *[Hint: use the normal model with the mean and SD from part (a)!]*

   c) $E(M – N) = \$100$, $SD(M – N) = \$125$
   d) $P(N – M \geq 240) = 0.1314$

4. a) $E(E – B) = 10$ minutes, $SD(E – B) = 11.180$ minutes
   b) $P(E – B > 0) = 0.8144$

5. a) mean = \$184, SD = \$2460.7316
   b) P(profit < -\$5000) = 0.0176
   c) ???